



ENCYCLOPÆDIA PERTHENSIS;
OR
UNIVERSAL DICTIONARY
OF THE
ARTS, SCIENCES, LITERATURE, &c.

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ARTS, SCIENCES, LITERATURE, &c.

INTENDED TO SUPERSEDE

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ENCYCLOPÆDIA PERTHENSIS.

P A R

(1.) * **PARALLEL.** *adj.* [*παράλληλος*; *parallèle*, Fr.] 1. Extended in the same direction, and preserving always the same distance.—Distorting the order and theory of causes, he draws them aside unto things whereto they run *parallel*; and their proper motions would never meet together. *Brown.* 2. Having the same tendency.—When honour runs *parallel* with the laws of God and our country, it cannot be too much cherished, *Addison.* 3. Continuing the resemblance through many particulars; equal; like.—The foundation principle of peripateticism is exactly *parallel* to an acknowledged nothing. *Glanville.*—I shall observe something *parallel* to the wooing and wedding suit in the behaviour of persons of figure. *Addison.*—In the *parallel* place before quoted. *Lefrey.*—Compare the words and phrases in one place of an author with the same in other places of the same author, which are generally called *parallel* places. *Watts.*

(2.) * **PARALLEL.** *n. f.* [from the adjective.] 1. Line continuing its course, and still remaining at the same distance from another line.—

Who made the spider *parallels* design,
Sure as De Moivre, without rule or line? *Pope.*
2. Line on the globe marking the latitude. 3. Direction conformable to that of another line.—
—Lines, that from their *parallel* decline,
More they proceed, the more they still disjoin. *Garth.*

4. Resemblance; conformity continued through many particulars; likeness.—

She lights her torch at their's to tell,
And shew the world this *parallel.* *Denham.*
'Twixt earthly females and the moon,
All *parallels* exactly run. *Swift.*

5. Comparison made.—The *parallel* holds in the gainfulness, as well as laboriousness of the work. *Decay of Piety.*—Comparing and drawing a *parallel* between his own private characters, and that of other persons. *Addison.* 6. Any thing resembling

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another.—Thou ungrateful brute, if thou wouldst find thy *parallel*, go to hell. *South.*—

None but thyself can be thy *parallel.* *Pope.*

(3.) **PARALLEL**, in geometry. See GEOMETRY.

(4.) **PARALLEL SAILING.** See NAVIGATION, Part II. Sect. II.; § 84—101.

(5.) **PARALLEL SPHERE**, that situation of the sphere wherein the equator coincides with the horizon, and the poles with the zenith and nadir.

(6.) **PARALLELS OF ALTITUDE**, or **ALMUCANTARS**, are circles parallel to the horizon, imagined to pass through every degree and minute of the meridian between the horizon and zenith, having their poles in the zenith.

(7.) **PARALLELS OF DECLINATION**, in astronomy, are the same with parallels of latitude in geography.

(8.) **PARALLELS OF LATITUDE**, in astronomy, are lesser circles of the sphere parallel to the ecliptic, imagined to pass through every degree and minute of the colures.

* **To PARALLEL.** *v. a.* [from the noun.] 1. To place, so as always to keep the same direction with another line.—The azores having a middle situation between these continents and that vast tract of America, the needle seemeth equally distracted by both, and diverting unto neither, doth *parallel* and place itself upon the true meridian. *Brown.* 2. To keep in the same direction; to level.—The loyal sufferers abroad became subjected to the worst effect of banishment, and even there expelled; so *paralleling* in their exigencies the most immediate objects of that monster's fury. *Fell.*—

His life is *parallel*'d
Ev'n with the stroke and line of his great justice. *Shak.*

3. To correspond to.—That he stretched out the north over the empty places, seems to *parallel* the

the expression of David, he stretched out the earth upon the waters. *Burnet*. 4. To be equal to; to resemble through many particulars.—In the fire, the destruction was so swift, sudden, vast and miserable as nothing can *parallel* in story. *Dryden*. 5. To compare.—I *parallel'd* more than once our idea of substance with the Indian philosopher's he knew not what, which supported the tortoise. *Locke*.

* **PARALLELISM**. *n. f.* [*parallelisme*, Fr. from *parallel*.] State of being parallel.—The *parallelism* and due proportioned inclination of the axis of the earth. *More*.—Speaking of the *parallelism* of the axis of the earth, I demand, whether it be better to have the axis of the earth steady, and perpetually *parallel* to itself, or to have it carelessly tumble this way and that way. *Ray on the Creation*.

* **PARALLELOGRAM**. *n. f.* [*παραλληλῶν* and *γρᾶμμα*; *parallelograme*, Fr.] In geometry, a right lined quadrilateral figure, whose opposite sides are parallel and equal. *Harris*.—The experiment we made in a loadstone of a *parallelogram*, or long figure, wherein only inverting the extremes, as it came out of the fire, we altered the poles. *Brown*.—We may have a clear idea of the area of a *parallelogram*, without knowing what relation it bears to the area of a triangle. *Watt's Logick*.

* **PARALLELOGRAMICAL**. *adj.* [from *parallelogram*.] Having the properties of a parallelogram.

* **PARALLELOPIPED**. *n. f.* [from *parallelopede*, Fr.] A solid figure contained under six parallelograms, the opposites of which are equal and parallel; or it is a prism, whose base is a parallelogram: it is always triple to a pyramid of the same base and height. *Harris*.—Two prisms alike in shape I tied so, that their axes and opposite sides being parallel, they composed a *parallelopede*. *Newton's Opticks*.—Crystals that hold lead are yellowish, and of a cubic or *parallelopede* figure. *Woodward*.

* **PARALLELOPIPEDIA**, in the old mineralogy, a genus of spars, externally of a determinate and regular figure, always found loose, detached, and separate from all other bodies, and in form of an oblique parallelopede, with six parallelogram sides and 8 solid angles; easily fissile either in an horizontal or perpendicular direction; being composed of numbers of thin plates, and those very elegantly and regularly arranged bodies, each of the same form with the whole mass, except that they are thinner in proportion to their horizontal planes, and naturally fall into these and no other figures, on being broken with a slight blow.

(1.) * **PARALOGISM**. *n. f.* [*παράλογισμος*; *paralogisme*, Fr.] A false argument.—That because they have not a bladder of gall, like those we observe in others, they have no gall at all, is a *paralogism* not admissible. *Bacon*.—Modern writers, making the drachma less than the denarius, others equal, have been deceived by a double *paralogism*. *Arbutnot*.—If a syllogism agree with the rules given for the construction of it, it is called a true argument: if it disagree with these rules, it is a *paralogism*, or false argument. *Watts*.

(2.) **PARALOGISM**, in logic, also implies a consequence drawn from principles that are false; or, though true, are not proved; or when a proposition is passed over that should have been proved.

To **PARALOGIZE**, *v. n.* To argue sophistically. *Asb.*

* **PARALOGY**. *n. f.* False reasoning.—That Methuselah was the longest liver of all the posterity of Adam, we quietly believe; but that he must needs be so, is perhaps below *paralogy* to deny. *Brown*.

(1.) * **PARALYSIS**. [*παράλυσις*; *paralyse*, Fr.] A palsy.

(2.) **PARALYSIS**. See **MEDICINE**, *Index*.

* **PARALYTICAL**. } *adj.* [from *paralyse*; *pa-*

* **PARALYTICK**. } *ralytique*, Fr.] Palsied;

inclined to palsy.—

Nought shall it profit, that the charming fair,
Angelic, softest work of heav'n, draws near
To the cold shaking *paralytick* hand,
Senseless of beauty. *Prior*.

—If a nerve be cut or freightly bound, that goes to any muscle, that muscle shall immediately lose its motion: which is the case of *paralyticks*. *Derham*.—The difficulties of breathing and swallowing, without any tumour, after long diseases, proceed commonly from a resolution or *paralytical* disposition of the parts. *Arbutnot*.

PARAMABIRO, } or **PARAMAIRAMBA**, the
PARAMARIBO, } capital of **SURINAM**, is
seated on the W. bank of the Surinam, about 18 miles from the sea coast, and has a good harbour, with 2 churches, 2 Jewish synagogues, and about 1400 houses. The streets are straight and ornamented on each side with orange, lemon, and tamarind trees. It is the rendezvous of all the European traders.

PARAMATTY, a town of Indostan, in the Carnatic about 10 miles W. of Coveriporum.

PARAMECIA, in natural history, a name given to such animalcules, as have no visible limbs or tails, and are of an irregularly oblong figure.

(1.) * **PARAMETER**. *n. f.* The latus rectum of a parabola, is a third proportional to the abscissa and any ordinate; so that the square of the ordinate is always equal to the rectangle under the *parameter* and abscissa: but in the ellipsis and hyperbola, it has a different proportion. *Harris*.

(2.) **PARAMETER**. See **CONIC SECTIONS**, *Index*.

PARAMO, Lewis De, a Spanish inquisitor, who published at Madrid, in 1598, a curious work upon the tribunal called *The Holy Office*. He writes with candour, omits no fact, but enumerates impartially all the victims of the bloody Inquisition.

(1.) * **PARAMOUNT**. *adj.* [*per* and *mount*.] 1. Superiour; having the highest jurisdiction: as lord *paramount*, the chief of the feigniory: with 10.—Leagues within the state are ever pernicious to monarchies; for they raise an obligation, *paramount* to obligation of sovereignty. *Bacon*.—The dogmatist's opinioned assurance is *paramount* to argument. *Glanville*.—If all power be derived from

from Adam, by divine institution, this is a right antecedent and *paramount* to all government. *Locke*.—Mankind, seeing the apostles possessed of a power plainly *paramount* to the powers of all the known beings, whether angels or demons, could not question their being inspired by God. *West*. 2. Eminent; of the highest order.—John a Chamber was hanged upon a gibbet raised a stage higher in the midst of a square gallows, as a traitor *paramount*. *Bacon*.

(3.) * *PARAMOUNT*. *n. f.* The chief.—

In order came the grand infernal peers,
Midst them their mighty *paramount*. *Milton*.

(3.) *PARAMOUNT*, in English law, the "highest lord of the fee of lands, of tenements, and hereditaments." As there may be a lord mesne where lands are held of an inferior lord, who holds them of a superior under certain services; so this superior lord is lord *paramount*. Also the king is the chief lord, or lord *paramount* of all the lands in the kingdom. *Coh. Lit. 1.*

* *PARAMOUR*. *n. f.* [*par* and *amour*, Fr.] 1. A lover or wooer.—

A lovely bevy of fair ladies sat,
Courtied of many a jolly *paramour*,
The which them did in modestwise amate.

Spenser.

No season then for her
To wanton with the sun, her lusty *paramour*.

Milton.

1. A mistress. It is obsolete in both senses, though not inelegant or unmusical.—

Shall I believe

That unsubstantial death is amorous,
And that the lean abhorred monster keeps
Thee here in dark to be his *paramour*? *Shak.*

(1.) *PARANA*, a large river of Brazil, which rises in about Lat. 18° S. runs a long course, and joins the *Paraguay*, in Lat. 28° S. See *PARAGUAY*, N° 2.

(2.) *PARANA*, a province of Brazil, in Paraguay, so named from the above river. See *PARAGUAY*, N° 1. St Anne is the capital.

PARANTES, a town of France, in the department of the Landes; 33 miles N. of Tartas.

(1.) * *PARANYMPH*. *n. f.* [*παρὰ* and *νύμφη*; *paranymphe*, Fr.] 1. A bride-maid; one who leads the bride to her marriage.—

The Timnian bride

Had not so soon preferred

Thy *paranymphe*.

2. One who countenances or supports another.—Sir hath got a *paranymphe* and a solicitor, a warrant and an advocate. *Taylor*.

(2.) *PARANYMPH*, among the ancients, the person who waited on the bridegroom, and directed the nuptial solemnities; called also *pronubus* and *anepes*, because the ceremonies began by taking auspices. As the *paranymphe* officiated only in the part of the bridegroom, a woman called *PRO-SUBA* officiated on the part of the bride.

* *PARAPEGM*. *n. f.* [*παράπεγμα*, *parapegma*] A brazen table fixed to a pillar, on which laws and proclamations were anciently engraved; also a table set up publicly, containing an account of the rising and setting of stars, eclipses of the sun and moon, the seasons of the year, &c. whence astrologers give this name to the tables on which

they draw figures according to their art. *Philippus*.—Our forefather, observing the course of the sun, and marking certain mutations to happen in his progress through the zodiac, set them down in their *parapegms* or astronomical canons. *Brown*.

(1.) * *PARAPET*. *n. f.* [*parapet*, Fr. *parapetto*, Italian.] A wall breast high.—There was a wall or *parapet* of teeth set in our mouth to restrain the petulance of our words. *Ben Jonson*.

(2.) *PARAPET*, in fortification, an elevation of earth designed for covering the soldiers from the enemy's cannon or small shot. See *FORTIFICATION*.

* *PARAPHERNA*. See *PARAPHERNALIA*.

* *PARAPHERNAL*. *adj.* Of or belonging to the *PARAPHERNALIA*, or the wife's peculiar property.

(1.) * *PARAPHERNALIA*. *n. f.* [Latin, *paraphernaux*, Fr.] Goods in the wife's disposal.

(2.) *PARAPHERNALIA*, in the civil law. See *LAW*, Part III, Chap. 1, Sect. V, § 9.

(1.) * *PARAPHIMOSIS*. *n. f.* [*παρὰφίμωσις*; *paraphimose*, Fr.] A disease when the prepuce cannot be drawn over the glans.

(2.) *PARAPHIMOSIS*. See *PARAPHIMOSIS*.

* *PARAPHONIA*. See *MEDICINE*, Index.

(1.) * *PARAPHRASE*. *n. f.* [*παράφρασις*; *paraphrase*, Fr.] A loose interpretation; an explanation in many words.—All the laws of nations were but a *paraphrase* upon this standing rectitude of nature. *South*.—In *paraphrase*, or translation with latitude, the author's words are not so strictly followed as his sense. *Dryden*.

(1.) A *PARAPHRASE* is an explanation of some passage in clearer and more ample terms.

* *To PARAPHRASE*. *v. a.* [*paraphraser*, Fr. *παράφραζω*] To interpret with laxity of expression; to translate loosely.—We are put to construe and *paraphrase* our own words. *Stillingfleet*.

What needs we *paraphrase* on what we mean?

We were at work but wanton; he's obscene.

Dryden.

—Where translation is impracticable, they may *paraphrase*.—But it is intolerable, that, under a pretence of *paraphrasing* and translating, a way should be suffered of treating authors to a manifest disadvantage. *Felton*.

* *PARAPHRAS*. *n. f.* [*paraphrasse*, French; *παράφρασις*] A lax interpreter; one who explains in many words.—The fittest for public audience are such, as following a middle course between the rigour of literal translators and the liberty of *paraphrases*, do, with great shortness and plainness deliver the meaning. *Hooker*.—The Chaldean *paraphrast* renders *Gerah* by *Meath*. *Arbutnot*.

* *PARAPHRAS*. *n. f.* [*paraphrasse*, French]—*Paraphras* is an inflammation of the diaphragm. The symptoms

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(1.) * *PARAPHRAS*. *n. f.* [*παράφρασις*; *paraphrasse*, French]—*Paraphras* is an inflammation of the diaphragm. The symptoms are a violent fever, a most exquisite pain, increased upon inspiration, by which it is distinguished from a pleurisy, in which the greatest pain is in expiration. *Arbutnot*.

(2.) *PARAPHRAS*. See *DIAPHRAGM*, and *MEDICINE*, Index.

PARAPHROSYNE, a word used by medical writers to denote a delirium, or an alienation of mind in fevers, or from whatever other cause.

PARAPHYMOSIS, a disorder of the penis, wherein the prepuce is shrunk, and withdrawn behind the glans, so as not to be capable of being brought to cover the fame; which generally happens in venereal disorders. See **MEDICINE** and **SURGERY**. *Indices*.

PARAPLEGIA. See **MEDICINE**, *Index*.

(1.) * **PARAQUETO**. *n. f.* A little parrot.

(2.) **PARAQUETO**. See **PSITTACUS**.

PARARA. *n. f.* an Anglo-American word, used in the Northern United States, for what is called in the Southern States, a **SAVANNAH**, i. e. an extensive rich plain, without trees, but covered with grass. Some of these are 40 miles broad, and several hundred miles long; and exhibit fine prospects.

(1.) * **PARASANG**. *n. f.* [*parasang*.] A Persian measure of length.—Since the mind is not able to frame the idea of any space without parts, instead thereof it makes use of the common measures, which, by familiar use, in each country, have imprinted themselves on the memory; as inches and feet, or cubits and *parasangs*. *Locke*.

(2.) The **PARASANG** is an ancient measure, differing at different times, and in different places; being usually 30, sometimes 40, and sometimes 50 stadia, or furlongs. The word, according to Littleton, has its rise from *parash angarius*, *q. d.* the space a post-man rides from one station, *angaria*, to another.

PARASAOULI, a town of Indostan, in Jyengar; 15 miles NNE. of Jyepour, and 83 W. of Agra.

PARASCENIUM, in the Grecian and Roman theatres, was a place behind the scenes whither the actors withdrew to dress and undress themselves. The Romans more frequently called it **POSTSCENIUM**. See **THEATRE**.

PARASELENE, in natural philosophy, a mock moon; a meteor or phenomenon encompassing or adjacent to the moon, in form of a luminous ring; wherein are observed sometimes one and sometimes two or more images of the moon.

PARASEMON, [*παράσειμον*.] among the Greeks, was the figure-carved on the prow of the ships to distinguish them from each other. This figure was generally that of a bull, lion, or other animal; sometimes the representation of a mountain, tree, flower, &c.

PARASIA, a country lying E. of Media.

(1.) * **PARASITE**. *n. f.* [*parasite*, Fr. *parasite*, Latin.] One that frequents rich tables, and earns his welcome by flattery.—

He is a flatterer,

A *parasite*, a keeper back of death. *Shak.*

Most smiling, smooth, detested *parasites*,

Courteous destroyers, affable wolves. *Shak.*

—Diogenes, when mice came about him, as he was eating, said, I see that even Diogenes nourisheth *parasites*. *Baron*.—

Thou, with trembling fear,

Or like a fawning *parasite*, obey'd. *Milton*.

The people sweat not for their king's delight,

T' enrich a pimp, or raise a *parasite*. *Dryden*.

(2.) **PARASITE**, among the ancient Greeks, was originally a very reputable title; the parasites be-

ing a kind of priests, at least ministers, of the gods in the same manner as the *epulones* were at Rome. They took care of the sacred corn, or the corn destined for the service of the temples and the gods, viz. sacrifices, feasts, &c. They had ever the intendance over sacrifices; and took care that they were duly performed. At Athens there was a kind of college of 12 parasites; each people of Attica furnishing one, who was always chosen out of the best families. Polybius adds, that a parasite was also an honourable title among the ancient Gauls, and was given to their poets. But of late it has been used as a term of reproach.

(3.) **PARASITES**, or **PARASITICAL PLANTS**, in botany, such plants as are produced out of the trunk or branches of other plants, from whence they receive their nourishment, and will not grow on the ground. Such are the mistletoe, &c.

* **PARASITICAL**. *adj.* [*parasitique*, French;

* **PARASITICK**. } from *parasite*.] Flattering; wheedling.—The bishop received small thanks for his *parasitick* presentation. *Hakeswill*.—Some *parasitick* preachers have dared to call those martyrs, who died fighting against me. *King Charles*.

* **PARASOL**. *n. f.* A small canopy or umbrella carried over the head to shelter from rain and the heat of the sun. *Did*.

PARASTATÆ, in anatomy. See **ANATOMY**, N^o 311.

* **PARASYNEXIS**. *n. f.* In the civil law, a conventicle or unlawful meeting. *Did*.

PARATALASSIA. See **PRIMORIE**.

PARAY, a town of France, in the dep. of the Saone and Loire, near the Bourbince; 6 miles W. of Charolles, and 16½ ESE. of Bourbon Lancy.

* To **PARBOIL**. *v. a.* [*parbouiller*, French.] To half boil; to boil in part.—*Parboil* two large capons upon a soft fire. *Bacon*.—

From the sea into the ship we turn,

Like *parboil'd* wretches, on the coals to burn.

Donne.

Like the scum starved men did draw

From *parboil'd* shoes and boots. *Donne*.

* **PARBREAK**. *n. f.* [from the verb.] Vomit. Obsolete.—

Her filthy *parbreak* all the place defiled has.

Spenser.

* To **PARBREAK**. *v. a.* [*brecker*, Dutch.] To vomit. Obsolete.

PARBUNCLE. *n. f.* in a ship, a rope almost like a pair of slings; it is seized both ends together, and then put almost double about any heavy thing that is to be hoisted in or out of the ship; having the hook of the runner hitched into it, to hoist it up by.

PARCÆ, in heathen mythology, goddesses who were supposed to preside over the accidents and events, and to determine the date or period of human life. The *Parcæ* were three, **CLOTHO**, **LACHESIS**, and **ATROPOS**. They spun the thread of men's lives; *Clotho* held the distaff and drew the thread; *Lachesis* twirled the spindle, and spun it; and *Atropos* cut it. The ancients represent the *Parcæ* divers ways: *Lucian*, in the shape of three poor old women, having large locks of wool, mixed with daffodils on their heads. Others represent *Clotho* in a long robe of divers colours, wearing a crown upon her head adorned with fe-

ven

ven stars, Lachesis in a robe beset with stars, and Atropos, clad in black. The ancients imagined that the *Parcæ* used white wool for a long and happy life, and black for a short and unfortunate one. See NECESSITY, § 4.

PARCAS, a town of Turkey, in Walachia.

PARCAY, a town of France, in the dep. of Maine and Loire; 12 miles SE. of Baugé, and 13½ NE. of Saumur.

PARCE', two towns of France: 1. in the dep. of Ille and Vilaine; 4 miles S. of Fougères: 2. in that of Sarthe, 6 miles E. of Sablé, and 12 SW. of Mans.

• PARCEL. *n. f.* [*parcelle*, French; *particula*, Lat.] 1. A small bundle. 2. A part of the whole; part taken separately.—

Women, Silvius, had they mark'd him

In *parcels*, as I did, would have gone near

To fall in love with him. *Shak.*

I drew from her a prayer of earnest heart,

That I would all my pilgrimage relate;

Whereof by *parcels* she had something heard,

But not distinctively. *Shak.*

An inventory thus importing

The several *parcels* of his plate. *Shak.*

—With what face could such a great man have begged such a *parcel* of the crown lands? *Davenant.*

—I have known pensions given to particular persons, any one of which, if divided into smaller *parcels*, and distributed to those who distinguish themselves by wit or learning, would answer the end. *Swift.*—The same experiment succeeds on two *parcels* of the white of an egg. *Arbutnot.*

3. A quantity or mass.—What can be rationally conceived in so transparent a substance as water for the production of these colours, besides the various sizes of its fluid and globular *parcels*. *Newton.*

4. A number of persons: in contempt.—

This youthful *parcel*

Of noble batch'lors stand at my bestowing. *Shak.*

5. Any number or quantity: in contempt.—Unless they could, by a *parcel* of fair words and pretences, engage them into a confederacy, there was no good to be done. *L'Estrange.*

• To PARCEL. *v. a.* [from the noun.] 1. To divide into portions.—If they allot and *parcel* out several perfections to several deities, do they not, by this, assert contradictions, making deity only to such a measure perfect? *South.*

Those ghostly kings would *parcel* out my pow'r,

And all the fatness of my land devour. *Dryden.*

2. To make up into a mass.—What a wounding shame, that mine own servant should *parcel* the sum of my disgraces by addition of his envy! *Shak.*

PARCELLES, John, } two eminent Flemish
PARCELLES, Julius, } painters of the 17th century, father and son, who excelled in painting sea-pieces.

(1.) • PARCENER. *n. f.* [In common law.]

When one dies possessed of an estate, and having issue only daughters, or his sisters be his heirs, so that the lands descend to those daughters or sisters; these are called *parceners*; and are but as one heir. *Diſt.*

(2.) PARCENER. See COPARCENER.

• PARCENERY. *n. f.* [from *parsonier*, Fr.] A

holding or occupying of land by more persons *pro indiviso*, or by joint tenants, otherwise called *coparceners*. *Cowel.*

(1.) • To PARCH. *v. a.* [from *vignatus*, says Junius; from *percoquo*, says Skinner; neither of them seem satisfied with their conjecture: perhaps from *perustus*, burnt, to *perust*, to *parch*; perhaps from *parchment*, the effect of fire upon parchment being almost proverbial.] To burn lightly and superficially; to scorch; to dry up.—

Hath thy fiery heart so *parch'd* thine entrails,
That not a tear can fall? *Shak.*

Did he so often lodge in open field
In winter's cold, and summer's *parching* heat,
To conquer France? *Shak.*

'Torrid heat,

And vapours as the Libyan air adust,
Began to *parch* that temp'rate clime. *Milton.*

I'm stupify'd with sorrow, past relief
Of tears; *parch'd* up and wither'd with my grief.

Dryden.

—Without this circular motion of our earth, one hemisphere would be condemned to perpetual cold and darkness, the other continually roasted and *parch'd* by the sun-beams. *Ray.*

The ground below is *parch'd*, the heav'n above us fry. *Dryden.*

Full fifty years

I have endur'd the biting winter's blast,
And the severer heats of *parching* summer. *Rowe.*

—The skin grows *parch'd* and dry. *Blackmore.*
A man distressed with thirst in the *parch'd* places of the wilderness, searches every pit, but finds no water. *Rogers.*

(2.) • To PARCH. *v. n.* To be scorched.—

We were better *parch* in Africk sun,
Than in the pride and salt scorn of his eyes. *Shak.*

—Many corns will dry and *parch* into barley. *Mortimer.*

PARCHIM, a town of Mecklenburgh, on the Elbe, which divides it into the New and Old towns, each of which has a church. It has suffered several times by fire. The population is about 3000. It is 20 miles SE. of Schwerin, and 55 E. of Lauenburg. Lon. 12. 0. E. Lat. 53. 34. N.

(1.) • PARCHMENT. *n. f.* [*parchemin*, Fr. *pergamena*, Lat.] Skins dressed for the writer. Among traders, the skins of sheep are called parchment, those of calves vellum.—Is not this a lamentable thing, that the skin of an innocent lamb should be made parchment; that parchment, being scribbled o'er, should undo a man? *Shak.*—In the coffin, that had the books, they were found as fresh as if newly written in parchment. *Bacon.*

We shrink like parchment in consuming flame. *Dryden.*

(2.) PARCHMENT, the skins of sheep or goats prepared after such a manner as to render it proper for writing upon, covering books, &c. The word comes from the Latin *PERGAMENA*, the ancient name of this manufacture, which is said to have been taken from the city of PERGAMOS, to Eumenes, the king of which, its invention is usually ascribed; though, in reality, that prince appears rather to have been the improver than the inventor of parchment. For the Persians of old, according to

to Diodorus, wrote all their records on skins; and the ancient Ionians, as we are told by Herodotus, made use of sheep skins and goat-skins in writing, many ages before Eumenes's time. Nor need we doubt that such skins were prepared and dressed for that purpose, after a manner not unlike that of our parchment; though probably not so artificially.—The manufacture of parchment is begun by the skinner, and finished by the parchment-maker. The skin being stripped of its wool, and placed in the lime pit, as described under SHAMMY, the skinner stretches it on a frame, and pares off the flesh with an iron instrument; this done, it is moistened with a rag; and powdered chalk being spread over it, the skinner takes a large pumice-stone, flat at bottom, and rubs over the skin, and thus scours off the flesh; he then goes over, it again with the iron instrument, moistens it as before, and rubs it again with the pumice-stone without any chalk underneath: this smooths and softens the flesh-side very considerably. He then drains it again, by passing over it the iron instrument as before. The flesh-side being thus drained, by scraping off the moisture, he in the same manner passes the iron over the wool or hair-side; then stretches it tight on a frame, and scrapes the flesh-side again: this finishes its draining; and the more it is drained the whiter it becomes. The skinner now throws on more chalk, sweeping it over with a piece of lamb-skin that has the wool on; and this smooths it still farther. It is now left to dry, and when dried, taken of the frame by cutting it all round. The skin thus far prepared by the skinner, is taken out of his hands by the parchment-maker, who first, while it is dry, pares it on a *summer*, (which is a calf skin stretched in a frame), with a sharper instrument than that used by the skinner; and working with the arm from the top to the bottom of the skin, takes away about one half of its thickness. The skin thus equally pared on the flesh-side, is again rendered smooth by being rubbed with the pumice-stone, on a bench covered with a sack stuffed with flacks; which leaves the parchment in a condition fit for writing upon. The parings thus taken off the leather, are used in making GLUE, SIZE, &c. See these articles. What is called VELLUM is only parchment made of skins of abortives, or at most sucking calves. This has a much finer grain, and is whiter and smoother than parchment; but is prepared in the same manner, except its not being passed through the lime-pit.

* PARCHMENT-MAKER. *n. f.* [*parchment* and *maker*.] He who dresses parchment.

PARCHWITZ, a town of Silesia, in Lignitz: containing two Lutheran churches, a Roman catholic chapel, and a cloth manufactory; 10 miles NE. of Lignitz.

PARCIEUX, Anthony DE, an eminent French mathematician, born at Uzès, in 1703. He was a member of the Academies of Sciences of Paris, Sweden and Berlin; and was appointed Censor Royal. He published a correct and methodical *Treatise on Rectilinear and Spherical Trigonometry*. He died in 1769.

PARCOL, or } a lake of Thibet, 25 miles in
PARCOUL, } circumference. Lon. 110.28. E.
Ferro. Lat. 43. 22. N.

PARCOW, a town of Poland, in Lublin.

(1.) * PARD. } *n. f.* [*pardus, pardalis*, Lat.]

(1.) * PARDALE. } The leopard; in poetry, any of the spotted beasts.—

The pardale swift, and the tyger cruel. *Spens.*
As pard to hind, or step-dame to her son. *Shak.*

A match for pards in flight, in grappling for the bear. *Dryden.*

(2.) PARDALE, } in. zoology. See FELIS, N°
PARDALIS } XXIII.

PARDHITZ, a town of Bohemia, in Chrudim; with a manufacture of swords, knives, &c. 55 miles E. of Prague.

PARDIES, Ignatius Gaston, an ingenious and learned French Jesuit, born at Paris in 1636. He was professor of rhetoric, and taught polite literature for several years. He also wrote several pieces in prose and verse, with peculiar delicacy. At length he devoted himself entirely to mathematics and natural philosophy. He died in 1673, of an infectious disorder contracted by preaching to the prisoners in the Bicetre during the Easter holidays. His Elements of Geometry are well known. A translation of them has gone through several editions. In 1673, he had a dispute with Sir Isaac Newton respecting his Theory of Light and Colours. See *Philos. Transf.* 1673.

PARDO, a town of Spain, in New Castile.

(1.) * PARDON. *n. f.* [*pardon*, Fr. from the verb.] 1. Forgiveness of an offender. 2. Forgiveness of a crime.—He that pleafeth great men, shall get pardon for iniquity. *Ecclesi. xx. 27.*—A slight pamphlet, about the elements of architecture, hath been entertained with some pardon among my friends. *Wotton.*

But infinite in pardon is my judge. *Milton.*

What better can we do than prostrate fall

Before him reverent, and there confess

Humbly our faults, and pardon beg? *Milton.*

Indulgences, dispenses, pardons, bulls,

The sport of winds. *Milton.*

3. Remission of penalty. 4. Forgiveness received.—A man may be safe as to his condition, but, in the mean time, dark and doubtful as to his apprehensions: secure in his pardon, but miserable in the ignorance of it. *South.* 5. Warrant of forgiveness, or exemption from punishment.—

The battle done, and they within our power,
Shall never see his pardon. *Shak. King Lear.*

(2.) PARDON, in criminal law, is the remitting an offence committed against the king. His power of pardoning was said by our Saxon ancestors to be derived *à lege sua dignitatis*: and it is declared in parliament, by Stat. 27 Hen. VIII. c. 24. that no other person hath power to pardon or remit any treason or felonies whatsoever; but that the king hath the whole and sole power thereof united and knit to the imperial crown of this realm. In democracies there is no power of pardoning. The king may pardon all offences merely against the crown or the public; excepting, 1. That, to preserve the liberty of the subject, the committing any man to prison out of the realm, is by the *habeas corpus* act, 31 Car. II. c. 2. made a *præmunire*, unpardonable even to the king. Nor, 2. can the king pardon, where private justice is principally concerned in the prosecution of offenders: *Non potest rex gratiam*

gratiam facere cum injuria et damno aliorum. Therefore, in appeals of all kinds (which are the suit, not of the king, but of the party injured), the prosecutor may release; but the king cannot pardon. Neither can he pardon a common nuisance, while it remains unredressed, or so as to prevent an abatement of it; though afterwards he may remit the fine: because though the prosecution is vested in the king to avoid the multiplicity of suits, yet (during its continuance) this offence favours more of the nature of a *private* injury to each individual in the neighbourhood, than of a *public* wrong. Neither, lastly, can the king pardon an offence against a popular or penal statute, after information brought; for thereby the informer hath acquired a private property in his part of the penalty. There is also a restriction of a peculiar nature, that affects the prerogative of pardoning, in case of parliamentary impeachments, viz. that the king's pardon cannot be pleaded to any such impeachment, so as to impede the inquiry, and stop the prosecution of great and notorious offenders. In the reign of Charles II. when the E. of Danby pleaded the king's pardon, the commons voted, "That a pardon is not pleadable in bar of an impeachment." And it was enacted by the act of settlement, 12 & 13 W. III. c. 2, "That no pardon under the great seal of England shall be pleadable to an impeachment by the commons in parliament." But, after the impeachment has been solemnly heard and determined, it is not understood that the king's royal grace is farther restrained or abridged: for, after the impeachment and attainder of the six rebel lords in 1715, three of them were from time to time reprieved by the crown; and at length received the king's most gracious pardon. The effect of such pardon by the king, is to make the offender a new man; to acquit him of all corporal penalties and forfeitures annexed to that offence for which he obtains his pardon; and not so much to restore his former, as to give him new credit and capacity. But nothing can restore or purify the blood when once corrupted, if the pardon be not allowed till after attainder, but the high and transcendent power of parliament. Yet if a person attainted receives the king's pardon, and afterwards hath a son, that son may be heir to his father; because the father being made a new man, might transmit new inheritable blood; though, had he been born before the pardon, he could never have inherited at all.

* *To PARDON.* *v. a.* [*pardonner*, Fr.] 1. To excuse an offender.—

When I beheld you in Cilicia,
An enemy to Rome, I pardon'd you. *Dryden.*
2. To forgive a crime.—I will pardon all their iniquities. *Jerem.*—

Forgiveness to the injur'd does belong,
But they ne'er pardon who commit the wrong. *Dryden.*

3. To remit a penalty.—
I pardon thee thy life before thou ask it. *Shak.*
4. *Pardon me*, is a word of civil denial, or slight apology.—Sir, *pardon me*, it is a letter from my brother. *Shak.*

* *PARDONABLE.* *adj.* [*pardonable*, Fr. from *pardon*.] Venial; excusable.—That which we do, being evil, is notwithstanding by so much more

pardonable, by how much the exigencies of so doing, or the difficulty of doing otherwise, is greater. *Hooker.*—A blind man sitting in the chimney corner is *pardonable* enough, but sitting at the helm, he is intolerable. *South.*—What English readers, unacquainted with Greek or Latin, will believe me, when we confess we derive all that is *pardonable* in us from ancient fountains? *Dryden.*

* *PARDONABLENESS.* *n. f.* [from *pardonable*.] Venialness; susceptibility of pardon.—St John's word is, all sin is transgression of the law; St Paul's, the wages of sin is death: put these two together, and this conceit of the natural *pardonableness* of sin vanishes away. *Hall.*

* *PARDONABLY.* *adv.* [from *pardonable*.] Venially; excusably.—I may judge when I write more or less *pardonably*. *Dryden.*

* *PARDONER.* *n. f.* [from *pardon*.] 1. One who forgives another.—

This is his pardon, purchas'd by such sin,
For which the *pardon*er himself is in. *Shak.*

2. One of the fellows that carried about the pope's indulgences, and sold them to such as would buy them, against whom Luther incensed the people of Germany. *Cowel.*

PARDOS, or *POMPENAY*, a town of Africa, in Anta, on the Gold Coast.

PARDUS, in zoology. See *FELIS*, N° XXIV.

(1.) *PARE*, Ambrose, an eminent French surgeon, of the 16th century, born at Laval in Maine. He was surgeon to several kings of France. Being a protestant, he would have been involved in the massacre of St Bartholomew's day, had not Charles IX. himself shut him up in his chamber, saying "a man so useful to all the world, ought not to perish in such a manner." He died at an advanced age, in 1590.

(2.) *PARE*, or *PARÉUS*, David, D. D. a celebrated protestant divine, born in 1548, at Francolstein, in Silesia. He studied at Hermsburg under the learned Christopher Schilling; afterwards at Heidelberg, under Zach. Ursin; was much patronized by Albert Kindler; and Prince Casimir; was admitted minister of Schlettenbach, in 1571; afterwards of Hemsbach, in Worms, where, in 1574, he married the sister of John Stibelius; in 1577, he became minister of Ogersheim; and in 1584, professor in the college of Heidelberg. In 1592, he was admitted D. D. and in 1602, succeeded Tossanus as professor of divinity. He published, 1. the German Bible, with notes, at Neustadt, in 1589; 2. a commentary on the Epistle to the Romans; 3. several tracts against Bellarmine and the Jesuits; with other polemical pieces; and died at Peraanum, in 1622.

(3.) *PARE*, Philip, son of the preceding, was born at Hemsbach, in 1576; studied at Neustadt and Heidelberg; became eminent for grammatical erudition; and under the patronage of the elector palatine, visited the universities of Basil in 1599, and Geneva in 1600. He became rector of Neustadt college in 1612; principal of that of Hanau in 1645; published his father's life and exegetical works in 1647; several tracts on grammar; with commentaries on the Scriptures, and other theological works.

(4.) *PARE*, Daniel, son of Philip, was also eminent for classical learning, and particularly for his skill

skill in the Greek language. He published many learned pieces; particularly Musæus's Hero and Leander, with notes; *Mellicium Atticum*, a selection from Greek Authors, &c. He was murdered by robbers in 1645.

* To PARE. *v. a.* [This word is reasonably deduced by Skinner from the French phrase, *parer les angles*, to dress the horses' hoofs when they are shaved by the farrier: thus we first said, *pare* your nails; and from thence transferred the word to general use.] To cut off extremities of the surface; to cut away by little and little; to diminish. If *pare* be used before the thing diminished, it is followed immediately by its accusative; if it precedes the thing taken away, or agrees in the passive voice with the thing taken away, as a nominative, it then requires a participle, as *away*, *off*.—The creed of Athanasius, and that sacred hymn of glory, than which nothing doth sound more heavenly in the ears of faithful men, are now reckoned as superfluities, which we must in any case *pare away*. Hooker.—

I have not alone

Employ'd you where high profits might come home;

But *par'd* my present havings to bestow

My bounties upon you. *Shak. Henry VIII.*

—I am a man, whom fortune hath cruelly scratch'd.

—'Tis too late to *pare* her nails now. *Shak.*

The lion, mov'd with pity, did endure

To have his princely paws all *par'd away*. *Shak.*

—The king began to *pare* a little the privilege of the clergy. *Bacon's Henry VII.*—

He *pares* his apple, that will cleanly feed.

Herbert.

—Whoever will partake of God's secrets, must first look into his own, he must *pare off* whatsoever is amiss. *Taylor.*—All the mountains were *pared off* the earth. *Burnet.*—The most poetical parts, which are descriptions and images, were to be *pared away*. *Dryden.*—The sword, as it was justly drawn by us, so can it scarce safely be sheathed, till the power of the great troubler of our peace be so far *pared* and reduced, as that we may be under no apprehensions. *Atterbury.*—

'Twere well if she would *pare* her nails. *Pope.*

PAREANUM, a village of Germany, near Heidelberg, where Dr Pare resided and died.

PARECALA, a fertile province of the isle of Lucon, containing mines rich in gold and precious stones; with above 7000 inhabitants.

PARECHIA, a town in the isle of Paros, built on the site of the ancient Paros, and defended by a fort. The European consuls reside in it.

PARADES, 3 towns of Spain; 1. in Asturias, 23 miles NW. of Oviedo; 2. in Leon, 13 miles NW. of Leon; 3. in New Castile, 8 miles N. of Sequena.

* PAREGORICK, *adj.* [*παρηγορικός*.] Having the power in medicine to comfort, mollify and assuage. *Di8.*

PAREGORIES, *n. f.* in pharmacy, medicines that assuage pain, otherwise called ANODYNES.

PAREJA, John, an eminent painter, born in the W. Indies, and originally a slave to Diego Velasquez, a celebrated painter. He acquired the art by studying it privately, without his master's knowledge. Philip IV. one day visiting Velas-

quez's museum, discovered his merit and gave him his liberty; yet his attachment to Velasquez was so strong, that he continued with him till his death. His portraits are equal to those of Velasquez. He died in 1670, aged 60.

PAREIRA FRAYA, in the materia medica, a kind of oblong and large root brought from Brasil.—It is certainly a diuretic of no mean character, and has done great service in nephritic cases. In pleuritis and quinies, it has been attended with more success than almost any medicine we know of singly.

PARELCON, *n. f.* in grammar, a figure by which a word or syllable is added to the end of another.

PARELLA, a town of France, in the dep. of the Doria, and late county of Canavese, in the ci-devant Piedmontese; 3½ miles SSW. of Ivrea, and 20 N. of Turin.

PAREMBOLE, *n. f.* in rhetoric, a figure wherein something relating to the subject is inserted in the middle of a period. All the difference between the parembolè and PARENTHESIS, according to Vossius, is, that the former relates to the subject in hand, whereas the latter is foreign to it.

(1.) * PARENCHYMA. *n. f.* [*παρυχημα*.] A spongy or porous substance; in physics, a part through which the blood is strained for its better fermentation and perfection. *Di8.*

(2.) PARENCHYMA, in anatomy, is a term introduced by Erasistratus, signifying all that substance which is contained in the interstices betwixt the blood-vessels of the viscera, which he imagined to be extravasated and concreted blood.

(3.) PARENCHYMA OF PLANTS. Grew applies this term to the pith or pulp, or that inner part of a fruit or plant, through which the juice is supposed to be distributed. See PLANTS.

* PARENCHYMATOUS. } *adj.* (from *paren-*
* PARENCHYMOSUS. } *chyma*.) Relating

to the parenchyma; spongy.—Ten thousand seeds of the plant hart's-tongue hardly make the bulk of a pepper-corn. Now the covers and true body of each seed, the *parenchymatous* and ligneous parts of both moderately multiplied, afford 100,000 millions of formed atoms in the space of a pepper-corn. *Grew.*—Those parts, formerly reckoned *parenchymatous*, are now found to be bundles of exceedingly small threads. *Chyne.*

* PARENESIS. *n. f.* [*παρενέσις*.] Persuasion; exhortation. *Di8.*

* PARENETICK. [*παρενέτικος*.] Hortatory.

(1.) PARENT, Anthony, as Dr Watkins calls him, or *Unfoine*, according to others, a mathematician, born at Paris, in 1666. He showed an early propensity to mathematics. At 14 he was put under a master, who taught rhetoric at Chartres. Here he saw a dodecaëdron, upon every face of which was delineated a sun-dial, except the lowest. Struck with the curiosity of these dials, he attempted drawing one himself. He then undertook to write a Treatise upon *Gnomonics*, and a book of *Geometry*. His friends then sent for him to Paris to study the law; but these studies were no sooner finished than he returned to mathematics. He then took pupils; and fortification having attracted particular notice, he turned his attention to it, and made two campaigns with the

marquis

marquis of Aligre, by which he instructed himself in viewing fortified places; of which he drew a number of plans. M. de Billettes, being admitted in the academy of sciences at Paris in 1699, as their mechanician, nominated for his disciple Parent, who excelled chiefly in this branch. Though his abilities were acknowledged, yet his impetuosity of temper provoked opposition; and he rose no higher than assistant member for geometry. He enjoyed this promotion but a short time; for he was taken off by the small-pox the same year, 1716, aged 50. He was author of many pieces, chiefly on mechanics and geometry.

(1.) * PARENT. *n. f.* [*parent*, Fr. *parens*, Lat.] A father or mother.—All true virtues are to honour true religion as their *parent*. *Hooker*.—His custom was, to spend an hour before evening prayer in catechising; whereat the *parents* and older sort were wont to be present. *Fell*.—

As a publick *parent* of the state,
My justice, and thy crime, requires thy fate. *Dryd*.
Real care in vain and native love
In the true *parent's* panting breast had force.

Prior.

(3.) PARENT is a term of relation applicable to those from whom we immediately derive our being. See MORAL PHILOSOPHY, Part II. Sect. III. § III. To this article belongs an inquiry into, 1. The legal duties of parents to their legitimate children. 2. Their power over them.

(4.) PARENTS, DUTIES OF, TO CHILDREN. I. The duties of parents to legitimate children consist in their *maintenance*, *protection*, and *education*. 1. The duty of parents to provide for the *maintenance* of their children is a principle of natural law; the municipal laws of all well-regulated states have taken care to enforce this duty; though Providence has done it more effectually than any laws, by implanting in the breast of every parent that natural *sympathy*, or insuperable degree of affection, which not even the deformity of person or mind, not even the wickedness, ingratitude, and rebellion of children, can totally suppress or extinguish. The civil law not only obliges the parent to provide maintenance for his child, but will not suffer a parent at his death totally to disinherit his child, without expressly giving his reason for so doing; and there are 14 such reasons reckoned up, which may justify such disinherison. If the parent alleged no reason, or a bad, or a false one, the child might set the will aside, by suggesting, that the parent had lost the use of his reason when he made the *improvident* testament. Our own laws have also made provision for this natural duty. It is a principle of law, that there is an obligation on every man to provide for those descended from his loins. But no person is bound to provide a maintenance for his issue, unless where the children are impotent and unable to work, either through infancy, disease, or accident; and then is only obliged to find them with necessaries, the penalty on refusal being no more than 20s. a-month. Any Popish parent refusing to allow his Protestant child a fitting maintenance, with a view to compel him to change his religion, the lord chancellor shall, by order of court, constrain him to do what is just and reasonable. If Jewish parents refuse to allow their Protestant children a fitting maintenance,

suitable to the fortune of the parent, the lord chancellor, on complaint, may make such order therein as he shall see proper. The English law has made no provision to prevent the disinherison of children by will; leaving every man's property in his own disposal, upon a principle of liberty in this as well as every other action. 2. *Protection* is also a natural duty, but rather permitted than enjoined by any municipal laws. A parent may maintain and uphold his children in their law-suits, without being guilty of the legal crime of maintaining quarrels. A parent may also justify an assault and battery in defence of the persons of his children; nay, where a man's son was beaten by another boy, and the father went near a mile to find him, and there revenged his son's quarrel by beating the other boy, of which beating he afterwards unfortunately died; it was not held to be murder, but manslaughter merely. 3. To give children an *education* suitable to their station in life is a duty pointed out by reason, and of far the greatest importance of any. Yet the municipal laws of most countries seem to be defective in this point, by not constraining the parent to bestow a proper education upon his children. The rich indeed are left at their own option, whether they will breed up their children to be ornaments or disgraces to their family. Yet in one case, that of religion, they are under peculiar restrictions; for it is provided, that if any person sends any child under his government beyond the seas, either to prevent its good education in England, or in order to enter into, or reside in, any Popish college, or to be instructed, persuaded, or strengthened in the Popish religion; in such case, besides the disabilities incurred by the child so sent, the parent or person sending shall forfeit 100l. which shall go to the sole use and benefit of him that shall discover the offence. And if any parent, or other, shall send or convey any person beyond sea, to enter into, or be resident in, or trained up in, any priory, abbey, nunnery, Popish university, college, or school, or house of Jesuits or priests, or in any private Popish family, in order to be instructed, persuaded, or confirmed, in the Popish religion; or shall contribute any thing towards their maintenance when abroad, by any pretext whatever; the person both sending and sent shall be disabled to sue in law or equity, or to be executor or administrator to any person, or to enjoy any legacy or deed of gift, or to bear any office in the realm, and shall forfeit all his goods and chattels, and likewise all his real estate for life. See NONCONFORMISTS.

(5.) PARENTS, POWER OF, OVER CHILDREN. II. The *power* of parents over their children is derived from the former consideration, their *duty*; this authority being given them, partly to enable the parent more effectually to perform his duty, and partly as a recompense for his care and trouble in the faithful discharge of it. The ancient Roman laws gave the father a power of life and death over his children; upon this principle, that he who gave had also the power of taking away. But the rigour of these laws was softened by subsequent constitutions: so that we find a father banished by the emperor Adrian for killing his son, though he had committed a very heinous crime;

upon this maxim, that *pater potestas in pietate debet, non in atrocitate, consistere*. But still they maintained to the last a very large and absolute authority: for a son could not acquire any property of his own during the life of his father; but all his acquisitions belonged to the father, or at least the profits of them, for his life. The power of a parent by the English law is much more moderate, but still sufficient to keep the child in order and obedience. He may lawfully correct his child, being under age, in a reasonable manner; for this is for the benefit of his education. The consent of the parent to the marriage of his child under age is absolutely necessary; for without it the contract is void. A father has no other power over his son's estate than as his trustee or guardian; for though he may receive the profits during the child's minority, yet he must account for them when he comes of age. He may indeed have the benefit of his children's labour while they live with him, and are maintained by him; but this is no more than he is entitled to from his apprentices or servants. The legal power of a father (for a mother, as such, is entitled to no power, but only to reverence and respect) over the persons of his children ceases at the age of 21; for they are then enfranchised by arriving at years of discretion, or that point which the law has established when the empire of the father or other guardian gives place to the empire of reason. Yet, till that age arrives, this empire of the father continues even after his death; for he may by his will appoint a guardian to his children. He may also delegate part of his parental authority, during his life, to the tutor or school-master of his child; who is then *in loco parentis*, and has such a portion of the power of the parent committed to his charge, viz. that of restraint and correction, as may be necessary to answer the purposes for which he is employed. The power of a parent in China is very great; for a father, while living, has the power of an absolute despotic tyrant, and after his death is worshipped as a god. Let a son become ever so rich, and a father ever so poor, there is no submission, no point of obedience, that the latter cannot demand, or that the former can refuse. The father is absolute master, not only of his son's estate, but also of his concubines and children, whom, whenever they displease him, he may sell to strangers. If a father accuses his son before a mandarine, there needs no proof of his guilt; for they cannot believe that any father can be so unnatural as to bring a false accusation against his own son. But should a son be so insolent as to mock his father, or arrive at such a pitch of wickedness as to strike him, all the province where this shameful act of violence is committed is alarmed; it even becomes the concern of the whole empire; the emperor himself judges the criminal. All the mandarines near the place are turned out of their posts, especially those of the town where he lived, for having been so negligent in their instructions; and all the neighbours are reprimanded for neglecting, by former punishments, to put a stop to the wickedness of the criminal before it arrived to such flagitiousness. As to the unhappy wretch himself, they cut him into a thousand pieces, burn his bones, level his house

to the ground, and even those houses that stand near it, and set up monuments and memorials of the horrid deed. See CHILDREN, FILIAL PIETY, PARENTAL AFFECTION, &c.

* PARENTAGE. *n. f.* [*parentage*, Fr. from *parent*.] Extraction; birth; condition with respect to the rank of parents.—

A gentleman of noble parentage. *Shak.*

Though men esteem thee low of parentage,
Thy father is th' eternal king. *Milton.*

To his levee go,

And from himself your parentage may know.

Dryden.

—We find him not only boasting of his *parentage*, as an Israelite at large, but particularizing his descent from Benjamin. *Atterbury.*

(1.) * PARENTAL. *adj.* [from *parent*.] Becoming parents; pertaining to parents.—It overthrows the careful course and *parental* provision of nature. *Brown.*—These eggs, hatched by the warmth of the sun into little worms, feed without any need of *parental* care. *Derham.*—Young ladies on whom *parental* controul sits heavily, give a man of intrigue room to think that they want to be parents. *Clarissa.*

(2.) PARENTAL AFFECTION, the endearing attachment of parents to their children, including in it love, a desire of doing good to those who, by an act of our own, depend upon us for all that they enjoy. Nature even excites this affection in brutes; but in them it continues only so long as it is necessary for the preservation of their offspring; for when these are able to provide for themselves, it ceases, and the relation is forgotten. In man, however, though it lessens, or at least becomes less anxious, as the dependence of the child becomes less, it never entirely ceases, except in some few instances of extreme depravity; and, indeed, it is one of the greatest comforts of life, even when all dependence has ceased. As parental kindness is the most simple and natural expansion of self-love, so there are innumerable instances of it in all countries, savage and civilized.

PARENTALIA, in antiquity, funeral obsequies, or the last duties paid by children to their deceased parents.

* PARENTATION. *n. f.* [from *parento*, Lat.] Something done or said in honour of the dead.

(1.) * PARENTHESIS. *n. f.* [*parentese*, Fr. *paren*, *is*, and *thesis*.] A sentence so included in another sentence, as that it may be taken out, without injuring the sense of that which incloses it: being commonly marked thus, ().—In vain is my person excepted by a *parenthesis* of words, when so many are armed against me with swords. *K. Charles.*—He is seldom mentioned, without a derogatory *parenthesis*, in any author. *Brown.*

Thou shalt be seen,

Though with some short *parenthesis* between,

High on the throne of wit. *Dryden.*

—Don't suffer every occasional thought to carry you away into a long *parenthesis*. *Watts.*

(2.) PARENTHESIS is defined by others, certain intercalary words inserted in a discourse, which interrupt the sense, but seem necessary for the better understanding of the subject. But this is not a definition of the parenthesis, but of the sentences included in it. Dr Johnson's, § 1. is strictly

strictly accurate. The parentheses are often misapplied by authors and printers, by being made to inclose words at the end of a sentence, where they are quite unnecessary, and still more, when they are made to inclose clauses without which the sentence is incomplete.

* **PARENTHETICAL**. *adj.* [from *parenthesis*.] Pertaining to a parenthesis.

PARENTIUM, an ancient sea-port town of Istria: (*Plin.* iii. c. 19) now called

PARENZO, a small but strong town in Istria, with a bishop's see and a good harbour; seated on the gulf of Venice, 9 miles NNW. of Rovigno, and 65 E. of Venice. It submitted to the Venetians in 1267. Lon. 13. 56. E. Lat. 45. 24. N.

* **PARER**. *n. f.* [from *pare*.] An instrument to cut away the surface.—

A hone and a *parer*, like sole of a boot, To pare away grass, and to raise up the root.

Tupper.

* **PARERGY**. *v. f.* [*παρεργα* and *εργον*.] Something unimportant; something done by the by.—Scripture being serious, and commonly omitting such *parergies*, it will be unreasonable to condemn all laughter. *Brown.*

PAREISIS, in medicine, a palsy of the bladder, wherein the urine is either suppressed or discharged involuntarily.

PARETONEUM, in mineralogy, an earth found on the shores of Egypt, Cyrene, and Crete, used by the ancients in painting. It had its name either from a part of Egypt, near which it was gathered, or from a town in that kingdom, where it was usually sold. Vitruvius is of the first opinion, and Volaturnus of the last. Of late it was thought to be lost; but it is still common on the shores of most of the islands of the Archipelago, though not observed or regarded; and is truly a very heavy and tough clay, of a fine white colour, found in masses of different sizes, generally as soft as the softer clays within the strata; and, by rolling about on the beach in this state, it gathers up the sand, small shells, and other foulnesses we always find about it. It is likely there are strata of it fine and pure in the cliffs there, and that the sea washes off masses of them in storms and high tides, which are what we find.

PARFAIT, Francis, a French dramatic writer, born at Paris in 1698. He wrote a tragedy entitled *Atrée*, and a comedy called *Panurge*; but his greatest work was a *General History of the French Theatre*, from its origin to his own time, in 15 vols. 12mo. He died in 1753, aged 55.

PARFRE, John, the oldest dramatic writer of England, but of whom nothing is recorded, except that he wrote a piece, entitled, *Candlemas Day, or the killing of the Children of Israel*; a *mystry*; 1512; republished in Mrs Hawkins's Collection of Old Plays, in 1773.

PARGA, a strong sea-port town in the late Venetian Albania, 26 miles W. of Arta, opposite Corfu; inhabited by Greeks and Albanians. Lon. 20. 47. E. Lat. 39. 28. N.

(1.) * **PARGET**. *n. f.* Plaster laid upon roofs of rooms.—

Gold was the *parget*, and the cieling bright
Did shine all scaly with great plates of gold.

Spenser.

—Of English tale the coarser sort is called plaster or *parget*; the finer spadd.

(2.) **PARGET**, in mineralogy, a name given to several kinds of gypsum, or plaster stone.

* To **PARGET**. *v. a.* [from the noun.] To plaster; to cover with plaster.—While we thus paint and *parget* our own deformities, we cannot allow any the least imperfection of another's to remain undetected. *Government of the Tongue.*

* **PARGETER**. *n. f.* [from *parget*.] A plasterer.

PARGETING, *part. n. f.* in building, is used for the plastering of walls, and sometimes for plaster itself. Pargeting is of various kinds: as, 1. White lime and hair-mortar-laid on bare walls. 2. On bare laths, as in partitioning and plain ceiling. 3. Renewing the insides of the walls, or doubling partition walls. 4. Rough-casting on heart-laths. 5. Plastering on brick-work with finishing mortar, in imitation of stone-work; and the like upon heart-laths.

PARHAM, a town of Antigua, 5 miles W. of St John's.

(1.) * **PARHELION**. *n. f.* [*παρελα* and *ηλιος*.] A mock sun.—To neglect that supreme resplendency that shines in God, for those dim representations of it that we do doat on in the creature, is as absurd, as it were for a Persian to offer his sacrifice to a *parhelion*, instead of adoring the sun. *Boyle.*

(2.) **PARHELION**, or) [from *παρελα*, near, and *ηλιος*,
PARHELIUM, *s. f.*] in natural philosophy, is a meteor in form of a bright light, appearing on one side of the sun. Appearances of this kind have been mentioned both by the ancients and moderns. Aristotle observes, that in general they are seen only when the sun is near the horizon, though he takes notice of two that were seen in Boihorus from morning till evening; and Pliny has related the times when such phenomena were observed at Rome. Gassendi says, that in 1635 and 1636 he often saw one mock sun. Two were observed by M. de la Hire in 1689; and the same number by Cassini in 1693, Mr Grey in 1700, and Dr Halley in 1702; but the most celebrated appearances of this kind were seen at Rome by Scheiner, by Muschenbroeck at Utrecht, and by Hevelius at Sedan. By the two former, 4 mock suns were observed, and by the latter 7. Parhelia are apparently of the same size with the sun, though not always of the same brightness; nor even of the same shape; and when a number appear at once, there is some difference in both respects among them. Externally they are tinged with colours like the rainbow; and many have a long fiery tail opposite to the sun, but paier towards the extremity. Parhelia are generally accompanied with coronas, some of which are tinged with rainbow colours, but others are white. (See **HALO**.) They differ in number and size; but all agree in breadth, which is that of the apparent diameter of the sun. A very large white circle, parallel to the horizon, generally passes through all the parhelia; and, if it were entire, it would go through the centre of the sun. Sometimes there are arcs of lesser circles concentric to this, touching those coloured circles which surround the sun. They are also tinged with colours,

B 2

hours, and contain other parhelia. There are also said to have been other circles obliquely situated with respect to all these. The order of the colours in these circles is the same as in the rainbow; but on the inside, with respect to the sun, they are red, as is also observed in many haloes. Parhelia have been visible for 1, 2, 3, and 4 hours together; and in North America they are said to continue some days, and to be visible from sunrise to sunset. When the parhelia disappear, it sometimes rains, or snow falls in the form of oblong spicules, as Maraldi, Weidler, Kraft, and others have observed; and because the air in N. America abounds with such frozen spicules, which are even visible to the eye, according to Ellis and Middleton, such particles have been thought to be the cause of all coronas and parhelia. Mr Wales says, that, at Churchill in Hudson's Bay, the rising of the sun is always preceded by two long streams of red light, one on each side of him, and about 10° distant from him. These rise as the sun rises, and as they grow longer begin to bend towards each other, till they meet directly over the sun, just as he rises, forming there a kind of parhelion or mock sun. These two streams of light, he says, seem to have their source in two other parhelia, which rise with the true sun; and in winter, when the sun never rises above the haze or fog, which he says is constantly found near the horizon, all these accompany him the whole day, and set with him. Once or twice he saw a 4th parhelion directly under the sun; but this is not common. These facts being constant, are very valuable, and may throw great light on the theory of these remarkable phenomena. Sometimes parhelia appear in a different manner; as when three suns have been seen in the same vertical circle, well defined, and touching one another. The true sun was in the middle, and the lowest touched the horizon; and they set one after the other. This appearance was seen by Malezieux in 1722. Other appearances similar to this are recited by M. Muschenbroeck. Sometimes the sun has risen or set with a luminous tail projecting from him, of the same breadth with his diameter, and perpendicular to the horizon. Such an appearance was seen by Cassini in 1672 and 1692, by De la Hire in 1702, and by Mr Ellis in Hudson's Bay. As M. Feuillée was walking on the banks of the river La Plata, he saw the sun rising over the river, with a luminous tail projecting downwards, which continued till he was six degrees high. PARASELÈNE, or mock moons, have also been seen, accompanied with tails and coloured circles, like those which accompany the parhelia. An account of several, and a particular description of a fine appearance of this kind, may be seen in Muschenbroeck. The Roman phenomenon, observed by Scheiner, is famous on account of its having been the first appearance of the kind that engaged the attention of philosophers. It is represented in *Pl. CCLXIX. fig. 1.* in which A is the place of the observer, B his zenith, C the true sun, AB a plane passing through the observer's eye, the true sun, and the zenith. About the sun C, there appeared two concentric rings, not complete, but diversified with colours. The lesser of them, DEF, was fuller, and more

perfect; and though it was open from D to F, yet those ends were perpetually endeavouring to unite; and sometimes they did so. The outer of these rings was much fainter, so as scarcely to be discernible. It had, however, a variety of colours, but was very inconstant. The third circle, KLMN, was very large, and all over white, passing through the middle of the sun, and everywhere parallel to the horizon. At first this circle was entire; but towards the end of the appearance it was weak and ragged, so as hardly to be perceived from M towards N. In the intersection of this circle, and the outward iris GKI, there broke out two parhelia, or mock suns, N and K, not quite perfect; K being rather weak, but N shone brighter and stronger. The brightness of the middle of them was something like that of the sun; but towards the edges they were tinged with colours like those of the rainbow; and they were uneven and ragged. The parhelion N was a little wavering, and sent out a spiked tail, NP, of a colour somewhat fiery, the length of which was continually changing. The parhelia at L and M in the horizontal ring were not so bright as the former; but were rounder, and white, like the circle in which they were placed. The parhelion N disappeared before K; and while M grew fainter, K grew brighter, and vanished the last of all. The order of the colours in the circles DEF, GKN, was the same as in the common haloes, namely, red next the sun; and the diameter of the inner circle was also about 45°; which is the usual size of a halo. The Rev. Dr Hamilton sent the following account of parhelia seen at Cockburn to the Royal Irish Academy:—"Wednesday, Sept. 24th, 1783, as I was preparing to observe the sun passing through the meridian, before the first limb touched the centre wire, it was obscured by a dark well-defined cloud, about 10° in diameter. Upon going to the door of the transit room, to see if it was likely soon to pass off the disk of the sun, I observed the following phenomena: From the western edge of the cloud issued a luminous arc parallel to the horizon, perfectly well defined, extending exactly to the northern meridian; it was about 30' broad, white, and ended in a blunted termination. On it were two parhelia; the nearest to the sun displaying the prismatic colours; the remote one white; and both ill defined. In a short time the cloud had passed off, and showed the luminous almicantar, reaching perfect to the true sun. While things were thus situated, I measured with an accurate sextant the distances of the parhelia: I found the coloured one 26°, the remote one 90°, from the true sun. Just as I had done this, a new and prismatic circle surrounded the sun, immediately within the prismatic parhelion. And now another coloured parhelion appeared on the eastern board. The sextant, with its face up and down, exactly measured this and the former at the original distance of 26°; the luminous almicantar still remaining perfect. In about 10 or 12 minutes, whitish hazy clouds came on, and obscured all these uncommon appearances. I did not observe that the atmospheric phenomena before or after were at all uncommon. The wind a light breeze at SSW. Bar. 29.6 rising; Thermometer 55. In *fig. 2. SM* represents

represents the fourth meridian; NM the north meridian; PP the prismatic circle, with two prismatic furs or parhelia, at 26° distance on each side the true sun; W the white parhelion, at 90° distance from the true sun; LA the luminous almicantar; and HO the horizon. Various hypotheses have been framed by philosophers to account for this phenomenon, particularly by M. Mariotte, Descartes, and Huygens. None of them, however, are satisfactory: but readers who wish to become acquainted with them may consult Huygens's dissertation on this subject, in Smith's Optics, book i. ch. 11. Muschenbroeck's Introduction, &c. vol. xi. p. 1038, &c. 4to.; but especially Dr Priestley's History of Vision, Light, and Colour, vol. ii. p. 613, &c.

(1.) **PARIA**, or **NEW ANDALUSIA**, a country of Terra Firma in S. America; bounded on the N. by the North Sea; E. by Surinam; S. by Guiana, and W. by New Granada and the Caraccas. See **ANDALUSIA**, **NEW**. **Cumana** is the capital. See **CUMANA**.

(2.) **PARIA**, a district of S. America, in La Plata, beginning 110 miles NW. of the city of La Plata, and extending 120 miles. The climate is cold, and the soil barren; but it has silver mines, and abounds with cattle. Its cheese is much esteemed, and exported through all the provinces of Peru.

(1.) **PARIAN**, *adj.* Of or from **PAROS**.

(2.) **PARIAN CHRONICLE**. See **ARUNDELIAN MARBLES**, § 1—3. Under that article, we have given as full a view of the arguments for and against the authenticity of the **Parian Chronicle** as the subject seemed to require, or as the nature of our work would admit. Such of our readers, however, as wish for further information on this subject, (which is equally interesting to the scholar and to the antiquarian,) we must refer to Robertson's attack, and to Gough's learned and judicious vindication of their authenticity, published in *Archæologia* for 1789. The extent of his learning, and the solidity of his arguments, appear, upon the whole, to outweigh the objections of his sensible and plausible opponent. Hewlett's book upon the same side of the question is also ingenious.

(3.) **PARIAN MARBLE**, in the natural history of the ancients, the white marble used then, and to this day, for carving statues, &c. and called by us at this time **STATUARY MARBLE**. Too many of the later writers have confounded all the white marbles under the name of the *Parian*; and among the workmen, this and all the other white marbles have the common name of *alabasters*; so that it is in general forgotten among them, that there is such a thing as alabaster different from marble; which, however, is truly the case. Almost all the world also have confounded the *Carrara marble* with this, though they are really very different; the *Carrara* kind being of a finer structure and clearer white than the *Parian*; but less bright and splendid, harder to cut, and not capable of so glittering a polish. The true *Parian marble* has usually somewhat of a faint bluish tinge among the white, and often has blue veins in different parts of it. It is supposed by some to have had its name from the island *Paros*, (See **PAROS**;) where it was first found; but

others will have it to have been so called from *Agoracritus Parius*, a famous statuary, who ennobled it by cutting a statue of *Venus* in it.

• **PARIANI**, the inhabitants of **PARIUM**.

• **PARIAS**, or **PERREAS**, a tribe of Hindoos, so peculiarly degraded beyond all others, that they live by themselves in the out-skirts of towns: and, in the country, build their houses apart from the villages, or rather have villages of their own, furnished with wells; for they dare not fetch water from those which other families make use of; and, lest these latter should inadvertently go to one of theirs, they are obliged to scatter the bones of dead cattle about their wells, that they may be known. They dare not in cities pass through the streets where the *Bramins* live; nor set foot in the villages where they dwell; nor enter a temple, either of their god *Wistnow* or *Eswara*; because they are held impure. They get their bread by sowing, digging, and building the walls of mud houses; most of those inhabited by the common people being raised by these *Parias*; who do all such kinds of dirty work as other people will not meddle with. Nor is their diet much more cleanly; for they eat cows, horses, fowls, or other carrion, which die of themselves. One would scarce imagine, that contentions for precedence should ever occur among a people who have renounced all cleanliness, and, like swine, wallow in filth; and who are held in such utter contempt by the rest of the Hindoos; yet pride has divided the *Parias* into two classes: the first are simply called **PARIAS**, the other **SERIPERES**. The employment of these last is to go about selling leather, which they dress; also to make bridles, and some of them serve for soldiers. The *Parias*, who reckon themselves the better family, will not eat in the houses of the *Seriperes*; who must pay them respect, by lifting their hands aloft, and standing upright before them. The *Seriperes*, when they marry, cannot set up a pandal, a kind of garland, before their doors, made with more than three stakes or trees; else the whole city would be in motion. They are, in fact, slaves; for when any person of authority dies in the families of the *Komus*, *Suttis*, *Palis*, *farriers*, or *goldsmiths*, and the relations incline to give some clothes to the *Seriperes*, their beards must be shaven; and when the corpse is carried out of town to be burned or interred, they must do that office; for which each receives a piece of silver, worth 3½ pence. These *Seriperes* are called at *Surat* *Hulachors*; that is, in the Persian language, *eat all*, or *caters at large*. Nothing can offend an *Hindoo* more than to be called an *Halachor*: yet these poor people submit to all this drudgery and contempt without repining. They are very stupid, and ignorant, and even vicious, from their wretched way of life: the *Bramins* and nobility shun them as if they had the plague, and look on the meeting a *Paria* as the greatest misfortune. To come near one of them is a sin, to touch them a sacrilege. If a *Paria* were dying, it is infamy to visit him, or to give him the least assistance, even in the utmost distress. A *Bramin* who touches a *Paria*, immediately washes himself from the impurity. Even their shadow and breath being reckoned contagi-

ous,

ous, they are obliged to live on the east side of their towns, that the westerly winds which reign in this country may keep back their breath. And a Bramin may kill one of these unhappy creatures, if he does not avoid it by getting out of his way: In short, they think them reprobated by God, and believe the souls of the damned enter into the Parias, to be punished for their crimes. Yet the mission have found among these dregs of the people very active zealous catechists, who by their labours have very much contributed to the conversion of their countrymen, particularly one Rajanniken, a Paria soldier, who, of all the inferior missionaries, has distinguished himself most by his labours and sufferings.

PARICHIA. See **PAROS**, N° 4.

PARIDRONG, a town of Thibet. Lon. 88. 34. E. Lat. 28. 0. N.

PARIED, a town of France, in the dep. of the Meuse; 6 miles SSE. of Estaing, and 12 E. of Verdun.

PARISOVATZ, a town of Croatia.

* **PARIETAL.** *adj.* [from *paries*, Latin.] Constituting the sides or walls.—The lower part of the *parietal* and upper part of the temporal bones were fractured. *Sharp.*

PARIETALIA OSSA. See **ANATOMY**, § 119.

PARIETARIA, **PELLITORY OF THE WALL**; a genus of the monœcia order, belonging to the polygamia class of plants; and in the natural method ranking under the 33d order, *Scabridæ*. The calyx of the hermaphrodite is quadrifid; there is no corolla; there are 4 stamina; one style; and one seed, superior and elongated. The female calyx is quadrifid; there is no corolla; nor are there any stamina. There is one style; and one seed superior and elongated. There are six species, of which, the

PARIETARIA OFFICINALIS is used in medicine. This has a creeping root. The stalk grows erect, is rough to the touch, and adhesive. The leaves are alternate, elliptical, lanceolate, veined, and a little rough. The flowers grow out of the axils of the leaves, in sessile, branched, verticillate clusters, of a greenish colour tinged with red. The anthers have a great degree of sensibility; for, if irritated with the point of a pin, they fly from the calyx with elastic force, and throw out their powder. The plant, has a cooling and diuretic quality. Three ounces of the juice taken internally, or a fomentation externally applied, have been found serviceable in the strangury. The plant laid upon heaps of cotton infested with weevils, is said to drive away those destructive insects.

* **PARIETARY.** *n. f.* [*parietaire*, Fr.] An herb. *Ainsl.*

PARIETES, in anatomy, a term used for the inclosures or membranes that stop up or close the hollow parts of the body; especially those of the heart, the thorax, &c. The parietes of the two ventricles of the heart are of unequal strength and thickness; the left exceeding the right, because of its office, which is to force the blood through all parts of the body; whereas the right only drives it through the lungs.

PARIGNE, a town of France, in the department of the Sarthe; 9 miles SE. of Mans.

PARILIA. See **PALES**.

PARILLA, or **Santa Parilla**, a town of Peru, in Lima, on the Santa, near the coast, 50 miles S. of Truxillo, and 230 NW. of Lima. Lon. 77. 50. W. Lat. 8. 36. S.

PARILOVA, a town of Russia, in Irkutsk.

(1.) **PARINA CANCHA**, a province of Peru, S. of Guamanga; fertile in corn and fruits, and abounding with cattle, as well as with gold and silver mines.

(2.) **PARINA COCAS**, a province of Lima, 75 miles long; which also abounds with gold and silver mines, pastures, cattle, corn, and fruits.

* **PARING.** *n. f.* [from *pare*.] That which is pared off any thing; the rind.—Virginity breeds mites, much like a cheele; and consumes itself to the very *paring*. *Shakspeare*—

To his guest tho' no way sparing,
He eat himself the rind and *paring*. *Pope.*

—In May, after rain, pare off the surface of the earth, and with the *parings* raise your hills high, and enlarge their breadth. *Mort. Husb.*

PARIPE, a town of Brazil, in Bahia.

(1.) **PARIS**, in fabulous history, the son of Priam, king of Troy, by Hecuba, also named *Alexander*. He was decreed, even before his birth, to become the ruin of his country; and when his mother, in the first months of her pregnancy, had dreamed that she should bring forth a torch which would set fire to her palace, the *Boothsayers* foretold the calamities which were to be expected from the imprudence of her future son, and which would end in the ruin of Troy. Priam, to prevent so great a calamity, ordered his slave Archelaus to destroy the child as soon as he was born. The slave only exposed the child on mount Ida, where the shepherds of the place found him, and educated him as their own. Some say a she-bear suckled him. Though educated among shepherds and peasants, he gave very early proofs of courage and intrepidity; and from his care in protecting the flocks of mount Ida from the rapacity of the wild beasts, he was named *Alexander*, a helper of men. He gained the esteem of all the shepherds, and his manly deportment recommended him to Genone, a nymph of Ida, whom he married, and with whom he lived with the most perfect tenderness. Their conjugal peace was, however, of no long duration. At the marriage of Peleus and Thetis, **ATE**, the goddess of discord, who had not been invited to partake of the entertainment, showed her displeasure, by throwing into the assembly of the gods who were at the celebration of the nuptials, a golden apple, on which were written the words, *Let it be given to the fairest*. All the goddesses claimed it as their own; the contention at first became general; but at last only three, Juno, Venus, and Minerva, wished to dispute their respective right to beauty. The gods, unwilling to become arbiters in an affair so delicate in its nature, appointed Paris to adjudge the prize. The goddesses appeared before their judge without covering or ornament, and each endeavoured by promises to influence his judgment. Juno promised him a kingdom; Minerva, wisdom and military glory; and Venus the fairest woman in the world for his wife. [*Ovid. Heroid 17. v. 118.*] After he had heard their several

several claims and promises, Paris adjudged the prize to Venus, and gave her the golden apple. This decision drew upon the judge and his family the resentment of the two other goddesses. Soon after, Priam proposed a contest among his sons and other princes, and promised to reward the conqueror with one of the finest bulls of mount Ida. His emissaries were sent to procure the animal, and it was found in the possession of Paris, who reluctantly yielded it. But he went to Troy and entered the lists of the combatants. He was received with applause, and obtained the victory over his rivals. Nestor the son of Neleus, Cyrenus son of Neptune, Polites, Helenus, and Deiphobus, sons of Priam. He likewise obtained a superiority over Hector himself; who, enraged to see himself conquered by an unknown stranger, pursued him closely; and Paris must have fallen a victim to his rage, had he not fled to the altar of Jupiter. This sacred retreat preserved his life; and Cassandra, the daughter of Priam, struck with the similarity of the features of Paris with those of her brothers, inquired his birth and his age. From these circumstances she discovered that he was her brother, and as such introduced him to her father, and to her brothers. Priam acknowledged Paris as his son, and all jealousy ceased among the brothers. Paris did not long remain inactive; he equipped a fleet, as if willing to redeem Hecione his father's sister, whom Hercules had carried away, and obliged to marry Telamon the son of Æacus. This was the pretended motive of his voyage, but the causes were far different. Helen was the fairest woman of the age, and Venus had promised her to him. He therefore went to Sparta, the residence of Helen, who had married Menelaus. He was received with great respect; but he abused the hospitality of Menelaus, and while the husband was absent in Crete, persuaded Helen to elope with him, and to fly to Ælia. Priam received her without difficulty, as his sister was then detained in a foreign country, and as he wished to show himself as hostile as possible to the Greeks. This affair was soon productive of serious consequences. When Menelaus had married Helen, all her suitors had bound themselves by a solemn oath to defend her from every violence; and therefore he reminded them of their engagements, and called upon them to recover her. Upon this all Greece took up arms; Agamemnon was chosen general of the combined forces, and a regular war was begun. Paris, meanwhile, who had refused Helen to the petitions and embassies of the Greeks, armed himself, with his brothers and subjects, to oppose the enemy; but he fought with little courage, and at the very sight of Menelaus, whom he had so recently injured, his courage vanished, and he retired from the army. In a combat with Menelaus, Paris must have perished, had not Venus interfered. He wounded, however, in another battle, Machaon, Euryphilus, and Diomedes; and, according to some, he killed with an arrow the great Achilles. The death of Paris is differently related: some say he was mortally wounded by one of the poisoned arrows of Philoctetes; and that when he found himself languid by his wounds, he ordered himself to be carried to the

feet of Ænone, whom he had basely abandoned, and who had foretold him that he would solicit her assistance in his dying moments. He expired before he came into the presence of Ænone, who threw herself upon his body, and stabbed herself to the heart. According to others, Paris did not immediately go to Troy when he left the Peloponnesus, but he was driven on the coasts of Egypt, where Proteus, the king of the country, detained him. He died about 1188 B. C. See TAOR.

(2.) PARIS, Matthew, one of the best English historians, from William the Conqueror to the latter end of the reign of Henry III. Leland, his original biographer, informs us, that he was a monk of St Alban's, and that he was sent by Pope Innocent to reform the monks of the convent at Holm in Norway. Bp. Bale adds, that, on account of his extraordinary gifts, he was much esteemed by Henry III. who ordered him to write the history of his reign. Fuller makes him a native of Cambridgeshire, and says, he was sent by the pope to visit the monks in the diocese of Norwich. Paris died in the monastery of St Alban's in 1259. He was a man of extraordinary knowledge for the 13th century; of an excellent moral character, and, as an historian, of strict integrity. His works are, 1. *Historia ab Adamo ad Conquestum Anglie*, lib. i. M. S. col. C. C. Cantab. c. ix. Most of this book is transcribed by Matthew of Westminster into the first part of his *Florilegium*. 2. *Historia major, seu rerum Anglicanarum historia à Gul. Conquestoris adventu ad annum 43 Henrici III. &c.* several times printed. 3. *Vita duorum Offarum, Merce regum, S. Albani fundatorum*. 4. *Gesta 22 abbatum S. Albani*. 5. *Additamenta chroniconum ad hist. majorem*; printed. 6. *Historia minor, five epitome majoris historie*; MS. Besides many other things in MS.

(3.) PARIS, in geography, the capital of France; is situated on the river Seine, in the department of Paris, and ci-devant ile of France, being one of the largest and finest cities in Europe. It derived its modern name from the ancient PARISI; and is supposed to have had the Latin name of LUTETIA, from *lutum, mud*, the place where it now stands having been anciently very marshy and muddy. Ever since the reign of Hugh Capet, that is, for above 800 years, this city hath been the usual residence of the kings of France; it is of a circular form, and, including the suburbs, about 15 English miles, in circumference. The number of its inhabitants is computed at above 800,000; that of its streets above 1000; and that of its houses upwards of 24,000, exclusive of the public structures of all sorts. Its greatest defect is the want of good water. The streets are narrow, but well built, paved, and lighted. The number of churches, hospitals, market-places, fountains, gates, and bridges, in this city is very great; besides the NATIONAL INSTITUTE, which supplies the place of the ci-devant academies, public libraries, &c. and above 100 hotels, some of them very stately. That part called *the City*, lies in the centre, and consists of three islands formed by the Seine, viz. the isles of Palais, Notre Dame, and Louviers. It is the principal of the three parts into which the city is divided, and contains the

the following remarkable structures: 1. Several bridges; of which some are of wood, and others of stone, and have most of them a row of houses on each side. The chief of these are the Pont-neuf and Pont-royal: the first consists of 12 arches, which, properly speaking, make two bridges, the one leading from the suburbs of St Germain to the city, and the other from thence to that part called *la Ville*; there is a carriage-way in the middle 30 feet broad, and foot walks on each side, raised two feet high; and in the centre stood, before the revolution, a brass statue of king Henry IV on horseback; but it was destroyed during the anti-monarchical mania, in 1792. On this bridge is also the building called *La Samaritaine*, from a group of figures upon it representing our Saviour and the Samaritan woman, standing near Jacob's well. Here is a pump to raise the water, which through several pipes supplies the quarter of the Louvre, and some other parts of the town. The Pont-royal which leads to the Thuilleries, was built by order of Lewis XIV. in the room of a wooden bridge that was carried away by the current in 1684. 2. The cathedral of *Notre Dame*, or our Lady, being dedicated to the Holy Virgin, which is a large stately Gothic structure, said to have been founded by king Childeric, and built in the form of a cross. Here, besides other great personages, are interred the cardinals de Retz and Noailles. From the two square towers belonging to it, is a noble prospect of the city and neighbouring country. Here is a vast quantity of gold and silver plate, rich tapestry, &c. and formerly there were 50 canons. Near it stood the palace of the Abp. in which is the advocates' library. 3. The priory and parish church of *St Bartholomew*; the last of which is the most beautiful in all this part of the city, and stands near the Palais. 4. The *Palais*, which gives name to an island, and in which the parliament, with many other courts, were formerly held. There is a beautiful chapel belonging to the Palais: in which is also the prison, or jail, called *La Conciergerie*. 5. The Hotel Dieu, the most ancient and largest hospital in Paris, in which 8000 sick and infirm poor are taken care of. 6. The hospital of St Catherine, where poor women and maidens are entertained three days. 7. The Grand Chatelet. 8. Fort l'Eveque, in which is the mint and a prison, near the street La Ferroniere, in which Henry IV. was stabbed by Ravalliac. 9. St Germain l'Auxerrois. 10. The Louvre, an ancient royal palace, of which a part was rebuilt by Lewis XIV. On one of its gates is the following inscription, *Dum totum impleat orbem*: the meaning of which is, "May it last till the owner of it hath extended his sway over the whole world:" which implies what the French kings have constantly aimed at; as well as what Bonaparte, the self constituted emperor of France, still aims at. This palace is joined to the Thuilleries by a gallery, in which are 180 models of fortresses, some situated in France, and some in other countries, executed with the utmost accuracy. Here is, or at least was, before the revolution a valuable collection of paintings, the mint, together with a prodigious quantity of rich tapestry hangings, and a collection of ancient arms, among which are those worn

by Francis I. at the battle of Pavia. Here also all the ci-devant royal academies held their meetings. (See ACADEMY. N^o I, 3; II, 3, 5; VIII, 3; XIII, 9, 11, 12.) 11. *Le Palais Royal*, built by Card. Richelieu, in 1636. It contained pictures to the value of four millions of livres, which were purchased by Richelieu, and of which a part belonged to Christina, queen of Sweden. 12. The *Thuilleries*, so called from a tile or brick-kiln which stood there formerly. Behind it are pleasant gardens, adorned with fine walks, planted with ever-greens, &c. with beautiful parterres, 3 fine fountains, and a canal. Behind the Thuilleries, on the bank of the river, are pleasant walks, composed of 4 rows of lofty elms, to which vast crowds of people resort, as well as to the gardens. In the palace is a spacious and magnificent theatre; and hard by it are the Elysian fields, and the church of St Roche. 13. *La Place de Louis le Grand*, a very beautiful square, in the centre of which was an equestrian statue of that king, which was also demolished by the democrats. 14. The *Place, or Square des Victoires*, which is round, and contained a statue of Lewis XIV. of gilt brass, erected to him by the duke of Foulade, with this inscription. *Viro immortali*. 15. The ci-devant Royal Library in the Rue Vivien, which contained 94,000 printed books, 30,000 MSS. and a prodigious collection of copperplates and medals. 16. The parish church of St Eustace, which stands in the quarter so named. 17. The gate of St Dennis; and 18. The gate of St Martin, both of which were erected in form of triumphal arches, in honour of Lewis XIV. 19. *La Greve*, an open place, where public rejoicings were celebrated, and malefactors executed. 20. The *Hotel de Ville*, a large building of Gothic architecture, adorned with columns of the Corinthian order. 21. The arsenal in the quarter of St Paul, consisting of many spacious buildings; among which are a foundry, and a house for making saltpetre. Here is a musketoon of two barrels, which it is said will pierce a thick board at the distance of six miles; and for discerning an object at that distance, has a telescope fixed to the barrel. 22. The *Temple*, a commandery of the knights of Malta, which gives name to a quarter; and, during the course of the revolution, has been used as a state prison, instead of the BASTILLE, which was destroyed July 14, 1789; but, like the Hydra's head, has been succeeded by numberless other Bastilles. 23. The ci-devant *La Maison professe des Jesuites*, in the quarter of St Anthony, in the church of which the hearts of Lewis XIII. and XIV. are preserved, each in a casket of gold, supported by two angels of massy silver, and as big as the life, hovering with expanded wings. In the same quarter was a fine looking-glass manufacture, where above 500 persons were employed in polishing plates cast at St Gobin. In that part of the city called the *University*, the principal places are, 1. The university, which was first founded by Charles the Great. 2. The Gobelins, a house were a great number of ingenious artists, in various manufactures and handicrafts, were employed by the government. The most curious tapestry of all sorts was made here. 3. The General Hospital, a most noble foundation for the poor of the female sex, where

where 7000 objects were taken care of and provided for. 4. The ci-devant Royal Physic Garden, in which are an immense variety of plants and trees. 5. The abbey of St Victor, in which is a public library, containing some very ancient and scarce books, several curious MSS. and a prodigious collection of maps and copperplates. 6. The College of Physicians. 7. The Little Chatelet, an old fortress, used as a prison. 8. The Rue St Jacques. 9. The Royal College, and that of Lewis the Great. 10. The Abbey of St Genevieve, in which is the marble monument of king Clovis, the shrine of St Genevieve, a large library, with a cabinet of antiquities and natural curiosities. 11. The ci-devant Royal Observatory, a most stately edifice, built on the highest part of the city. 12. The Academy of Surgery, instituted in 1731. 13. The Convent of Franciscans, in the quarter of St Andrew, where there were remains of the palace of Julian the Apostate, in which Childebert, and some other kings of the Franks, afterwards resided. 14. The Theatre. 15. The Convent of Carthusians, in the quarter of Luxemburg, containing fine paintings. 16. The ci-devant palace of Luxemburg, or Orleans, a magnificent structure, containing fine paintings by Rubens with a noble garden. 17. The Abbey of St Germain des Prez, which contained a very valuable library, the MSS. alone making 8000 volumes; also a cabinet of antiquities. 18. The *Hotel des Invalides*, erected by Lewis XIV. in which lame and superannuated officers and soldiers were maintained. These buildings take up 17 acres. The chapel is very magnificent. Hard by was the military academy. For the history of this city, during the late bloody revolution; See *REVOLUTION*. Paris is 70 miles S. of Rouen, 263 SE. of London, 615 NW. of Vienna, and 630 NE. of Madrid. Lon. 2. 25. E. Lat. 48. 50. N.

(4.) PARIS, a department of France, containing the capital (N^o 3.) with its suburbs, and a circuit of about 3 miles around it.

(5.) PARIS, a mountain in the isle of Anglesey, on the coast of North Wales, which abounds in copper ore, the bed of which is above 40 feet thick. The lessees of this mine annually raise from 6000 to 7000 tons of merchantable ore, and daily employ above 40 furnaces in smelting it. This ore contains a great quantity of sulphur, which must be separated by roasting before it can be fluxed into copper. Part of the vitriolic acid is dispersed into the air by the fire; another part attacks and dissolves such a quantity of the copper, that the water in which the roasted ore is washed (by means of old iron immersed in it according to the German method) produces great quantities of fine copper, so that the proprietors have obtained in one year near 100 tons of the copper precipitated from this water. If this water were afterwards evaporated, it would yield green vitriol or vitriolated iron, at nearly the rate of 200 tons of vitriol for each 100 tons of iron at least; which, at the rate of 3l. Sterling per ton, might produce very good profit to the undertakers, if any should settle such a manufacture there.

(6.) PARIS, an island on the coast of S. Carolina.

(7.) PARIS, a thriving township of New York, in Herkemer county, 6 miles W. of Whitestown. It has a congregational church, an academy called HAMILTON, and, in 1796, contained 3459 citizens, of whom 564 were electors. Iron ore is found near it.

(8.) * PARIS. *n. f.* [*acnitum*]. An herb. *Ains.*

(9.) PARIS, in botany, *HERB PARIS*, or *TRUE-LOVE*, a genus of the trigynia order, belonging to the octandria class of plants; and in the natural method ranking under the 11th order, *Sarmentacea*. The calyx is tetraphyllous; there are four petals, narrow in proportion; the berry quadrilocular. There is but one species, growing naturally in woods and shady places both in Scotland and England. It hath a single naked stem, greenish blossoms, and bluish black berries.—The leaves and berries are said to partake of the properties of opium; and the juice of the berries is useful in inflammations of the eyes. Linnæus says, that the root will vomit as well as ipecacuanha, but must be taken in double the quantity. Goats and sheep eat the plant; cows, horses, and swine, refuse it. Though this plant has been reckoned poisonous, being ranked among the aconites; yet late authors attribute quite other properties to it, esteeming it a counter-poison, and good in malignant and pestilential fevers.

(10.) PARIS, *HERB OF AMERICA*, or OF CANADA. See *TRILLIUM*.

(11.) PARIS, MASSACRE OF. See *FRANCE*, § 41, 42.

(12.) PARIS, PLASTER OF. See *PLASTER*.

(1.) * PARISH. *n. f.* [*parochia*, low Latin; *paroisse*, Fr. of the Greek *παροικία*, i. e. *ecclesiarum conventus, accolatus, sacra vicinia*]. The particular charge of a secular priest. Every church is either cathedral, conventual, or parochial: cathedral is that where there is a bishop seated, so called a cathedral: conventual consists of regular clerks, professing some order of religion, or of a dean and chapter, or other college of spiritual men; parochial is that which is instituted for saying divine service, and administering the holy sacrament to the people dwelling within a certain compass of ground near unto it. Our realm was first divided into *parishes* by Honorius, archbishop of Canterbury, in the year 636. *Cowel*.—Dametas came piping and dancing, the merriest man in a *parish*. *Sidney*.—By the Catholic church is meant no more than the common church, into which all such persons as belonged to that *parish*, in which it was built, were wont to congregate. *Pearson*.

The tythes, his *parish* freely paid, he took;
But never su'd, or cur'd with bell or book.

Dryden.

(2.) * PARISH. *adj.* 1. Belonging to the parish; having the care of the parish.—

A *parish* priest was of the pilgrim train. *Dryd*.
Not *parish* clerk, who call the psalms to clear.

Gay.

—The office of the church is performed by the *parish* priest, at the time of his interment. *Ayliffe*.
—A man, after his natural death, was not capable of the least *parish* office. *Mari. Scrib*.—The *parish* allowance to poor people is very seldom a comfortable

comfortable maintenance. *Law.* 2. Maintained by the parish.—The ghost and the *parish* girl are entire new characters. *Gay.*

(3.) PARISH is otherwise defined the precinct of a parochial church, or a circuit of ground inhabited by people who belong to one church, and are under the particular charge of its minister. The word comes from *παροικία*, *habitation*; of *παρὰ* *near*, and *οἶκος* *house*. Du Cange observes, that the name *παροικία* was anciently given to the whole territory of a bishop, and derives it from *neighbourhood*; because the primitive Christians, not daring to assemble openly in cities, were forced to meet secretly in neighbour houses. In the ancient church, there was one large edifice in each city for the people to meet in; and this they called *parochia*, *parish*. But the signification of the word was afterwards enlarged, and meant a diocese, or the jurisdiction of a bishop, consisting of several churches. Du Pin observes, that country parishes had not their origin before the 4th century; but those of cities are more ancient. Alexandria is said to have been divided into parishes. In the early ages of Christianity in this island, parishes were unknown, or at least signified the same that a diocese now does. There was then no appropriation of ecclesiastical dues to any particular church; but every man was at liberty to contribute his tithes to any priest or church he pleased, but he was obliged to do it to some; or if he made no special appropriation, they were paid to the bishop, to distribute them among the clergy, and for other pious purposes. Sir Henry Hobart maintains that parishes were first erected by the council of Lateran, held A. D. 1179. But Mr Selden proves, that the clergy lived in common without any division of parishes, long after the time mentioned by Camden, (A. D. 636.) and it appears from the Saxon laws, that parishes were in being long before the council of Lateran in 1179. The distinction of parishes occurs in the laws of king Edgar, about 970. It seems pretty clear and certain, says Judge Blackstone (Com. Vol. I. p. 112.) that the boundaries of parishes were first ascertained by those of a manor or manors; because it very seldom happens that a manor extends itself over more than one parish, though there are often many manors in one parish. The lords, he adds, as Christianity spread, began to build churches upon their own demesnes or wastes, to accommodate their tenants in one or two adjoining lordships; and that they might have divine service regularly performed therein, obliged all their tenants to appropriate their tithes to the maintenance of the one officiating minister, instead of leaving them at liberty to distribute them among the clergy of the diocese in general; and this tract of land, the tithes of which were so appropriated, formed a distinct parish; and this accounts for the frequent intermixture of the parishes one with another. For if a lord had a parcel of land detached from the main of his estate, but not sufficient to form a parish of itself, it was natural for him to endow his newly erected church with the tithes of such lands. Extra-parochial wastes and marsh lands, when improved and drained, are by 17 Geo. II. cap. 37. to be assessed to all parochial rates in the parish next adjoining. Cam-

den reckons 9284 parishes in England; and Chamberlayne makes 9913. They are now generally reckoned about 10,000.

PARISH-CLERK, *n. f.* is a compound sufficiently authorized, but is more properly written in *two words* by Mr Gay. (See PARISH. § 2.) In every parish in England, the parson hath a parish-clerk under him, who is the lowest officer of the church. These were formerly clerks in orders, and their business at first was to officiate at the altar; for which they had a competent maintenance by offerings; but they are now laymen, and have certain fees with the parson on christenings, marriages, burials, &c. besides wages for their maintenance. The law looks upon them as officers for life; and they are chosen by the minister of the parish, unless there is a custom for the parishioners or churchwardens to choose them; in which case the canon cannot abrogate such custom; and when chosen it is to be signified, and they are to be sworn into their office by the archdeacon, for which the court of king's bench will grant a mandamus.

* PARISHIONER. *n. f.* [*parœficiæ*, Fr. from *parish*.] One that belongs to the parish.—I praise the Lord for you, and so may my parishioners; for their sons are well tutored by you. *Shak.*

Hail bishop Valentine; whose day this is,

All the air is thy diocese; . . .

And all the chirping choristers

And other birds are thy parishioners. *Donne.*

—In the greater out-parishes, many of the *parishioners*, through neglect, do perish. *Graunt.*—I have deposited thirty marks, to be distributed among the poor *parishioners*. *Addison.*

PARISI, ancient Britons, who inhabited the countries now called *Durham*, *Westmoreland*, and *Cumberland*. *Anderson's Royal General.*

PARISIAN, *adj.* Of or belonging to Paris.

PARISIANS, the people of PARIS. See FRANCE, § 54; and REVOLUTION.

(1.) PARISI, an ancient people of Gallia Celtica, who inhabited the country about the Sequana and Marona, since called the isle of France.

(2.) PARISI, an ancient people of Britain, who had the Brigantes on the N. and W. the German sea on the E. and the Coritani on the S.; from whom they were separated by the Humber. They inhabited the district now called *HOLDERNESSE*, in Yorkshire.

PARISIORUM CIVITAS. See LUTETIA.

(1.) PARISOT, John Patroclus, a French writer of the 17th century, who published a work entitled *La Foi dévoilée, par la Raïson*, which incensed the French clergy so much, that they obtained an order for its suppression.

(2.) PARISOT, a town of France, in the dep. of Aveyron; 10½ miles SW. of Villefranch, and 21 W. of Sauveterre.

PARISUS, a river of Pannonia, which runs into the Danube. *Strabo.*

PARITEE HORUN, a town of Chinese Tartary, 445 miles ENE. of Peking. Lon. 143. 2. E. Ferro. Lat. 42. 28. N.

* PARITOUR. *n. f.* [from *apparitor*.] A beadle; a summoner of the courts of civil law.—You shall be summoned by an host of *paritours*; you shall be sentenced in the spiritual court. *Dryden.*

* PARITY.

* **PARITY.** *n. f.* [*parité*, Fr. *paritas*, Latin.] Equality; resemblance.—We may here justly tax the dishonesty and shamefulness of the mouths, who have upbraided us with the opinion of a certain stoical *parity* of sins. *Hall*.—That Christ or his apostles ever commanded to set up such a *parity* of prebysters, and in such a way as those Scots endeavour, I think is not very disputable. *King Charles*.—Survey the total set of animals, and we may, in their legs or organs of progression, observe an equality or length and *parity* of numeration. *Brown*.—Those accidental occurrences, which excited Socrates to the discovery of such an invention, might fall in with that man that is of a perfect *parity* with Socrates. *Hale*.—Their agreement in essential characters, makes rather an identity than a *parity*. *Glanville*.—Women could not live in that *parity* and equality of expence with their husbands, as now they do. *Graunt*.—By an exact *parity* of reason, we may argue, if a man has no sense of those kindnesses that pass upon him, from one like himself, whom he sees and knows, how much less shall his heart be affected with a grateful sense of his favours, whom he converses with only by imperfect speculations, by the discourses of reason, or the discoveries of faith? *South*.

PARIUM, in ancient geography, a noble city of Mysia Minor, with a port on the Propontis; called *Adressia* by Homer, according to Pliny; but Strabo distinguishes them: according to others, it is the *PAROS* of Homer. It was the birth-place of Neoptolemus, surnamed *Glossigraphus* (*Strabo*.) Here stood a Cupid, equal in exquisite workmanship to the Cnidian Venus. It is now called *Camanar*.

(1.) * **PARK.** *n. f.* [*pearrue*, Sax. *parc*, Fr.] A piece of ground inclosed and stored with wild beasts of chase, which a man may have by prescription or the king's grant. Manwood, in his forest-law, defines it thus: a park is a place for privilege for wild beasts of venery, and also for other wild beasts that are beasts of the forest and of the chase: and those wild beasts are to have a firm peace and protection there, so that no man may hunt or chase them within the park, without license of the owner: a park is of another nature, than either a chase or a warren; for a park must be inclosed, and may not lie open; if it does, it is a good cause of seizure into the king's hands; and the owner cannot have action against such as hunt in his park, if it lies open. *Cowel*.—We have *parks* and inclosures of all sorts of beasts and birds which we use not only for view or rareness, but likewise for dissections and trials. *Bacon*.

(2.) **PARK.** See CHASE and FOREST. No man can erect a park without license under the broad seal; for the common law does not encourage matter of pleasure, which brings no profit to the commonwealth. But there may be a park in reputation erected without any lawful warrant; and the owner may bring his action against persons killing his deer. To a park, 3 things are required. 1. A grant thereof. 2. Inclosures by pale, wall, or hedge. 3. Beasts of a park; such as the buck, doe, &c. And where all the deer are destroyed, it shall no more be counted a park; for a park consists of vert, venison, and inclosure: and if it

is determined in any of them, it is a total disparking. Parks as well as chases are subject to the common law, and are not governed by the forest law.

(3.) **PARK**, as connected with gardening. See FARM, § IV, 1—4: and GARDENING, § II, 1—4. The most perfect composition of a place that can be imagined, consists of a garden opening into a park, with a short walk through the latter to a farm, and ways along its glades to ridings in the country; but to the farm and the ridings the park is no more than a passage; and its woods and its buildings are but circumstances in their views; its scenes can be communicated only to the garden. The affinity of the two subjects is so close, that it would be difficult to draw the exact line of separation between them. Gardens have lately encroached both in extent and in style on the character of a park; but still there are scenes in the one which are out of reach of the other. The small sequestered spots which are agreeable in a garden, would be trivial in a park; and the spacious lawns, which are among the noblest features of the latter, would, in the former fatigue, by their want of variety; even such as, being of a moderate extent, may be admitted into either, will seem bare and naked if not broken, in the one, and lose much of their greatness if broken, in the other. The proportion of a part to the whole, is a measure of its dimensions: it often determines the proper size for an object, as well as the space fit to be allotted to a scene; and regulates the style which ought to be assigned to either. But whatever distinctions the extent may occasion between a park and a garden, a state of highly cultivated nature is consistent with each of their characters; and may in both be of the same kind, though in different degrees. The excellencies both of a park and a garden are happily blended, at Hagley, near Stourbridge in Worcestershire, the seat of Lord Lyttelton, where the scenes are equally elegant and noble. It is seated in the midst of a pleasant and fertile country, between the Clent and Witcherry hills.

(4.) **PARK OF ARTILLERY.** See ARTILLERY, N° 5, § 3.

(5.) **PARK OF PROVISIONS**, in military affairs, the place where the sutlers pitch their tent in the rear, and sell their provisions to the soldiers. Likewise that place where the bread-waggons are drawn up, and where the troops receive their ammunition-bread, being the store of the army.

* **TO PARK.** *v. a.* [from the noun.] To inclose as in a park.—

How are we *park'd*, and bounded in a pale,
A little herd of England's tim'rous deer,
Maz'd with a yelping kennel of French curs. *Shak.*
PARKANY, a town of Hungary, at the conflux of the Danube and the Gran; 2 miles N. of Gran, and 14 E. of Comorn.

(1.) **PARKER**, Henry, Lord Morley, a noble author, who flourished in the reign of Henry VIII. and wrote several works, a list of which may be seen in Mr Walpole's (or Lord Orford's) Catalogue of Royal and Noble Authors, vol. 1. He was one of the barons, who signed the memorable letter to Pope Clement VII. threatening him with the loss of his supremacy in England, unless

he proceeded to dispatch the king's divorce against Q. Catharine.

(2.) PARKER, Matthew, the 2d Protestant archbishop of Canterbury, was born at Norwich in 1504, the 19th of Henry VII. His father, who was in trade, died when he was 12 years old; but his mother took care of his education, and at the age of 17 sent him to Corpus-Christi college in Cambridge, where, in 1523, he took his degree of A. B. In 1527 he was ordained, created A. M. and chosen fellow. In 1533 or 1534 he was made chaplain to Q. Anne Boleyn, who obtained for him the deanery of Stoke-Clare in Suffolk, where he founded a grammar school. After her death Henry made him his own chaplain, and in 1541 prebendary of Ely. In 1544, he was elected master of Corpus-Christi college, and in 1555 vice-chancellor of the university. In 1547 he lost the deanery of Stoke, by the dissolution of that college; and married the daughter of Robert Harleston, a Norfolk gentleman. In 1552 he was nominated by Edward VI. dean of Lincoln, which enabled him to live in great affluence; but Mary I. was hardly seated on the throne before he was deprived of every thing, and obliged to live in obscurity, often changing his place of abode to avoid the fate of the other reformers. Q. Elizabeth succeeded in 1558; and in 1559, Dr Parker, from indigence and obscurity, was at once raised to the see of Canterbury; an honour which he neither solicited nor desired. He was consecrated Dec. 17, 1559, in Lambeth chapel, and not in a tavern as the Romanists pretended, by the four surviving reformed bishops, viz. William Badow, formerly of Bath, now elect of Chichester; John Scoug, formerly of Chichester, now elect of Hereford; Miles Coverdale, formerly of Exeter; and John Hodgkin, suffragan of Bedford, all deprived in Mary's time. In this high station he acted with spirit and propriety. He visited his cathedral and diocese in 1560, 1565, 1570, and 1573. He repaired and beautified his palaces at Lambeth and Canterbury, at an expense of above 14000. sterling, which is at least equal to ten times the sum now. He gave several of the most magnificent entertainments which are on record, and regaled not only the rich, but fed plentifully the poor. Queen Elizabeth was present at one of these. He founded several scholarships in Corpus-Christi college in Cambridge, and gave large presents of plate to that and other colleges in this university. He gave 100 volumes to the public library. He likewise founded a free school at Rochdale in Lancashire. He took care to have the fees filled with pious and learned men; and, considering the great want of bibles in many places, he, with the assistance of other learned men, improved the English translation, had it printed on a large paper, and dispersed through the kingdom. This worthy prelate died in 1575, aged 72, and was buried in his own chapel at Lambeth. He was pious without affectation or austerity, cheerful and contented in the midst of adversity, moderate in the height of power, and beneficent beyond example. He wrote several books; and published four of our best historians; *Matthew of Westminster*, *Matthew Paris*, *Aster's Life of King Alfred*, and *Tho. Walsingham*. He also translated the Psalter. This version was

printed, but without a name, which led the learned Wood to attribute them to an obscure poet of the name of Keeper.

(3.) PARKER, John, an eminent lawyer of the 17th century, who practised at Northampton about 1640. He was educated in one of the Temples at London; and, being afterwards against the king, was made a member of the high court of justice in 1649, where he gave sentence against the three lords, Capel, Holland, and Hamilton, who were beheaded. During Cromwell's usurpation, he was made an assistant committee-man for his county. In 1650 he published a book in defence of the new government, as a commonwealth, without a king or house of lords. In June 1655, when Cromwell was declared protector, he was appointed a commissioner for removing obstructions at Worcester-house in the Strand, near London, and was sworn serjeant at law next day. In Jan. 1659, he was appointed one of the barons of the exchequer by the Rump Parliament; but, upon a complaint, was displaced. However, he was again regularly made serjeant at law, on the recommendation of Chancellor Hyde, at the first call after the restoration.

(4.) PARKER, Samuel, D. D. an English clergyman, son of the preceding, who, by temporizing, became Bp. of Oxford. He was born Sept. 1640, at Northampton, and educated among the Puritans in Northampton; whence, being fit for the university, he was sent to Wadham college in Oxford, and admitted in 1659 under a presbyterian tutor. Here he led a strict and religious life, and was esteemed one of the most precious young men in the university. He took the degree of A. B. Feb. 28, 1659-60. Upon the restoration, he hesitated what side to take; but continuing publicly to speak against episcopacy, he was much discountenanced by the new warden Dr Blanford, who had been appointed to that office upon the dawn of the restoration in 1659. Upon this he removed to Trinity collg., where, by the advice of Dr Ralph Ruthwell, then a senior fellow of that society, he was rescued from the prejudices of his education, which he publicly avowed in print. He then became a zealous Anti-puritan, and for many years acted the part of what was then called a *true son of the church*. In this temper having taken the degree of M. A. in 1663, he entered into holy orders, went to London, and became chaplain to a nobleman; continuing to display his wit upon his old friends the presbyterians, Independents, &c. In 1665, he published some philosophical Essays, and was elected F. R. S. These Essays he dedicated to Sheldon, Abp. of Canterbury, who became his patron; and in 1667 made him his chaplain. Being thus in the road to preferment, he left Oxford, and resided at Lambeth, under his patron; who, in 1670, made him archdeacon of Canterbury. In Nov. 1670, he joined the train of William prince of Orange, who visited Cambridge, and had the degree of D. D. conferred upon him there. In Nov. 1672, he was installed a prebendary of Canterbury; and was made rector of Ickham and Chatham in Kent by the archbishop. He was very obsequious to the court during the reign of Charles II. and upon the accession of James II. he continued the same servile

vile complaisance; and soon reaped the fruits of it in the bishopric of Oxford, to which he was appointed by James II. in 1686, being allowed to hold the arch-deaconry of Canterbury in commendam. He was likewise made a privy counsellor, and, by a royal mandamus, president of Magdalen College in Oxford. These favours, however, were the price of his religion, which he scrupled not to sacrifice to his ambition. His authority in his diocese was very insignificant. At last, falling into contempt, trouble of mind threw him into a distemper, of which he died, unlamented, at Magdalen College, March 20, 1687. He sent, however, a Discourse to James, persuading him to embrace the Protestant religion, with a letter to the same purpose, which was printed at London in 1690, 4to. He wrote several pieces, in all which Burnet allows that there was an entertaining liveliness; though "neither grave nor correct."

(5, 6.) PARKER, Samuel, son of the preceding was an excellent scholar, and of singular modesty. He married a bookseller's daughter at Oxford, where he resided with a numerous family; to support which, he published some books, with a modest *Vindication of his Father*. One of his sons is now, or was lately, a bookseller at Oxford.

(7.) * PARKER. *n. f.* [from *park*.] A park keeper. *Ainsf.*

PARKER'S BAY, a bay on the SE. coast of Jamaica.

(1.) PARKER'S ISLAND, an island of the United States, on the coast of Maine, in Lincoln county, separated by a narrow strait from Arrowsick island on the N. It is named from John Parker, who purchased it from the natives in 1650; and part of it is still possessed by his descendants.

(2.) PARKER'S ISLAND, an island on the Chesapeake, near the coast of Maryland, 15 miles S. of Annapolis.

PARKER'S RIVER, a river of Massachusetts, which rises in Essex county, and, after running several miles, falls into the Sound between Plumb Island and the main land. It is navigable about 2 miles from its mouth, where a bridge, built in 1758, crosses it, 870 feet long, and 26 broad, consisting of stone piers, with eight wooden arches.

PARKGATE, a sea port town of Cheshire, on the NE. coast of the Dee, at its mouth, 12 miles NW. of Chester, and 193 NNW. of London.

PARKHURST, John, a learned divine and lexicographer, born at London; and educated at Clare Hall, Cambridge; of which he was admitted fellow in 1751, and took his degrees of A. B. and A. M. He settled at Epsum in Surry; was the intimate friend of Bp. Horne, and like him, adopted the opinions of Hutchinson. He published, 1. A Greek and English Lexicon, 4to. 2. A Hebrew and English Lexicon, 4to.; both of which are very useful; 3. An Answer to Dr Priestly on the pre-existence of Christ. He died in 1797.

PARKINSON, John, an eminent English botanist, born in 1567. He was the first who singly described and figured the subjects of the flower garden. His *Theatrum Botanicum* contained a more copious history of medicinal plants than any former publication; but the title of his first work included a pun upon his name; viz. *Paradisi in Sole*

Paradisi Terrestris: i. e. *Park-in-Sun's Terrestrial Paradise*.

PARKINSONIA, so called in honour of the English botanist *Parkinson*; a genus of the monogynia order, belonging to the decandria class of plants; and in the natural method it ranks under the 33d order, *Lomentaceae*. The calyx is quinquefid; there are 5 petals, all oval except the lowest, which is reniform; there is no style; the legumen moniform, or like strong b-ads. We know but one species, which is very common in the Spanish West Indies, and has lately been introduced into the English settlements, for the beauty and sweetness of its flowers. In the countries where it grows naturally, it rises to a tree of 20 or more feet high, and bears long slender bunches of yellow flowers, which have a most agreeable sweet scent.

(1.) * PARKLEAVES. *n. f.* An herb. *Ainsf.*

(2.) PARK-LEAVES. See HYPERICUM, N° 1. PARKSTEIN, a town of Bavaria, in Saltzbach; 16 miles N. of Nabburg, and 17 NE. of Saltzbach.

PARLASCA, a town of Italy, in the dep. of Olona, district and late duchy of Milan, on the E. bank of the Lake Como.

* PARLE. *n. f.* [from *parler*, Fr.] Conversation; talk; oral treaty; oral discussion of any thing.—

Of all the gentlemen,

That every day with *parle* encounter me,
In thy opinion, which is worthier love? *Shak.*

Our trumpet call'd you to this general *parle*.

Shak.

The bishop, by a *parle*, is, with a show

Of combination, cunningly betray'd. *Daniel.*

I hate this *parle*; 'tis tame: if we must meet,

Give me my arms. *Roué's Amb. Step-mother.*

(1.) * PARLEY. *n. f.* [from the verb.] Oral treaty; talk; conference; discussion by word of mouth.—Seek rather by *parley* to recover them, than by the sword. *Sid.—*

Well, by my will, we shall admit no *parley*;

A rotten case abides no handling. *Shak.*

Summon a *parley*, we will talk with him.

Shak.

—Let us resolve never to *parley* with our lusts. *Calamy.*—*Parley* and holding intelligence with guilt in the most trivial things, he pronounced as treason to ourselves, as well as unto God. *Fell.—*

'Twas beyond *parley* when the siege was laid.

Dryd.

We yield on *parley*, but are storm'd in vain,

Dryd.

Yet when some better fated youth

Shall with his am'rous *parley* move thee,

Reflect one moment on his truth,

Who, dying, thus persists to love thee. *Prior.*

(2.) A PARLEY, in war, is a conference with an enemy. Hence, to beat or sound a *parley*, is to give a signal for holding such a conference by beat of drum, or sound of trumpet.

* To PARLEY. *v. n.* [from *parler*, French.] To treat by word of mouth; to talk; to discuss any thing orally. It is much used in war for a meeting of enemies to talk.—A Turk desired the captain to send some, with whom they might more conveniently *parley*. *Knolle's Hist.*—He *parleys* with her a while, as imagining she would advise him to proceed. *Brooms.*

(1.)

(1.) ***PARLIAMENT**, *n. f.* [*parliamentum*, low Latin; *parlement*, French.] In England, is the assembly of the king and three estates of the realm; namely, the lords spiritual, the lords temporal, and commons, for the debating of matters touching the commonwealth, especially the making and correcting of laws; which assembly or court is, of all others, the highest, and of greatest authority. *Cowel.*—

The king is fled to London,

To call a present court of *parliament*. *Shak.*

Far be the thought of this from Henry's heart,

To make a shambles of the parliament house.

Shak.

—The true use of *parliament* is very excellent. *Bac n.*—I thought the right way of *parliaments* the most safe for my crown. *King Charles.*—These are mob readers: If Virgil and Martial stood for *parliament* men, we know who would carry it. *Dryd.*

(2.) **THE PARLIAMENT** is the grand assembly of the three states of this kingdom, summoned together by the king's authority, to consider of matters relating to the public welfare, particularly to enact and repeal laws.

(3.) **PARLIAMENT, ANTIQUITY OF.** The original or first institution of parliament lies so far hidden in the dark ages of antiquity, that the tracing of it out is equally difficult and uncertain. The word *parliament* is, comparatively, of modern date; derived from the French, *parler*, and signifying the place where they met and spoke, or conferred together. It was first applied to general assemblies of the states under Lewis VII. in France, about the middle of the 12th century. But it is certain, that, long before the Norman conquest, all matters of importance were debated and settled in the great councils of the realm; a practice which seems to have been universal among the northern nations, particularly the Germans; and carried by them into all the countries of Europe, which they over-ran at the dissolution of the Roman empire. Relics of this constitution, under various modifications and changes, are still to be met with in the diets of Poland, Germany, and Sweden, and formerly in the assembly of the states in France: for what was there lately called the *parliament*, was only the supreme court of justice, consisting of the peers, certain dignified ecclesiastics, and judges; which was neither in practice, nor supposed to be in theory, a general council of the realm.

(4.) **PARLIAMENT, ANTIQUITY OF IN ENGLAND.** In England, this general council hath been held immemorially, under the several names of *mic-hel synoth*, or *great council*; *mic-hel gemote*, or *great meeting*; and more frequently *WITTENA GEMOTE*, or, *the meeting of wisemen*. It was also styled in Latin, *commune concilium regni*, *magnum concilium regis*, *curia magna*, *conventus magnatum vel procerum*, *officij generalis*, and sometimes *communitas regni Anglie*. We have instances of its meeting to order the affairs of the kingdom, to make new laws, and to amend the old, or, as Fleta expresses it, *novis injuriis emerfis nova constituere remedia*, so early as the reign of Ina king of the West Saxons, Offa king of the Mercians, and Ethelbert king of Kent, in the several kingdoms of the heptarchy.

And after their union, the *Mirroir* informs us that King Alfred ordained for a perpetual usage, that these councils should meet twice in the year, or oftener, if need be, to treat of the government of God's people; how they should keep themselves from sin, should live in quiet, and should receive right." The subsequent Saxon and Danish monarchs held frequent councils of this sort, as appears from their codes of laws; the titles whereof usually speak them to be enacted, either by the king, with the advice of his *wittena gemote*, as *Hæc sunt instituta, quæ Edgarus rex consilio sapientum suorum instituit*: or to be enacted by those sages with the advice of the king; as *Hæc sunt judicia quæ sapientes, consilio regis Ethelstani, instituerunt*; or, lastly, to be enacted by them both together, as *Hæc sunt institutiones quas rex Edmundus et episcopi sui, cum sapientibus suis, instituerunt*. These great councils were also occasionally held under the first princes of the Norman line. Glanvil, who wrote in the reign of Henry II. speaking of the particular amount of an amercement in the sheriff's court, says, it never yet had been ascertained by the general assize or assembly, but was left to the custom of particular counties. Here the general assize is spoken of as a meeting well known, and its statutes or decisions are put in a manifest contradiction to custom, or the common law. And in Edward III.'s time, an act of parliament, made in the reign of William I. was pleaded in the case of the abbey of St Edmund's-bury, and judicially allowed by the court. Hence it indisputably appears, that parliaments, or general councils, are coeval with the kingdom itself. How those parliaments were constituted and composed, has been matter of great dispute among our learned antiquarians; whether the commons were summoned at all; or, at what period they began to form a distinct assembly. But waving these controversies, it is generally agreed, that, in the main, the constitution of parliament, as it now stands, was marked out so long ago as the 17th year of King John, A. D. 1215, in the great charter granted by that prince; wherein he promises to summon all arch-bishops, bishops, abbots, earls, and greater barons, personally; and all other tenants in chief under the crown, by the sheriff and bailiffs; to meet at a certain place, with 40 days notice, to assess aids and scutages when necessary. (See *MAGNA CHARTA*.) And this constitution has subsisted in fact at least from 1266, 49 Henry III. there being still extant writs of that date, to summon knights, citizens, and burgesses, to parliament. We proceed, therefore, to inquire, wherein consists this constitution of parliament, as it now stands, and has stood, for at least 500 years:

1. As to the manner and time of its assembling:
2. Its constituent parts:
3. The laws and customs relating to parliament:
4. The methods of proceeding; and of making statutes, in both houses;
- And, 5. The manner of the parliament's adjournment, prorogation, and dissolution.

(5.) **PARLIAMENT, ASSEMBLING OF.** I. The parliament is regularly summoned by the king's writ or letter, issued out of chancery by advice of the privy council, at least 40 days before it begins to sit. It is a branch of the royal prerogative, that no parliament can be convened by its own authority,

erty, or by the authority of any, except the king alone. And this prerogative is founded upon very good reason. For, supposing it had a right to meet spontaneously, without being called together, it is impossible to conceive that all the members of each of the houses would agree unanimously upon the proper time and place of meeting; and if half of the members met, and half absented themselves, who shall determine which is really the legislative body, the part assembled, or that which stays away? It is therefore necessary that the parliament should be called together at a determinate time and place; and highly becoming its dignity and independence, that it should be called together by none but one of its own constituent parts: and, of the three constituent parts, this office can only appertain to the king; as he is a single person, whose will may be uniform and steady; the first person in the nation being superior to both houses in dignity, and the only branch of the legislature that has a separate existence, and is capable of performing any act at a time when no parliament is in being. Nor is it any exception to this rule, that by some modern statutes, on the demise of a king or queen, if there be then no parliament in being, the last parliament revives, and is to sit again for six months, unless dissolved by the successor; for this revived parliament must have been originally summoned by the crown. It is true, that the convention parliament which restored King Charles II. met above a month before his return; the lords by their own authority, and the commons in pursuance of writs issued in the name of the keepers of the liberty of England by authority of parliament; and that the said parliament sat till the 29th of December, full 7 months after the restoration, and enacted many laws, several of which are still in force. But this was for the necessity of the thing, which supercedes all law; for if they had not so met, it was morally impossible that the kingdom should have been settled in peace. And the first thing done after the king's return was to pass an act declaring this to be a good parliament, notwithstanding the defect of the king's writ: so that, as the royal prerogative was chiefly wounded by their so meeting, and as the king himself, who alone had a right to object, consented to waive the objection, this cannot be drawn into an example in prejudice of the rights of the crown. Besides, it was at that time a great doubt among the lawyers, whether even this healing act made it a good parliament, and held by very many in the negative; though it seems to have been too nice a scruple. And yet, out of abundant caution, it was thought necessary to confirm its acts in the next parliament by stat. 13 Car. II. c. 7. & c. 14. It is likewise true, at the time of the REVOLUTION, A. D. 1688, the lords and commons, by their own authority, and upon the summons of the prince of Orange (afterwards King William III.), met in a convention, and therein disposed of the crown and kingdom. But this assembling was upon a like principle of necessity as at the Restoration; that is, upon a full conviction that King James II. had abdicated the government, and that the throne was thereby vacant: which supposition of the individual members was confirmed by their concurrent resolution,

when they actually came together. And, in such a case as the palpable vacancy of a throne, it follows *ex necessitate rei*, that the form of the royal writs must be laid aside, otherwise no parliament can ever meet again. For let us put another possible case, and suppose, for the sake of argument, that the whole royal line should at any time fail, and become extinct, which would indisputably vacate the throne: in this situation it seems reasonable to presume, that the body of the nation, consisting of lords and commons, would have a right to meet and settle the government; otherwise there must be no government at all. And upon this and no other principle did the convention in 1688 assemble. The vacancy of the throne was precedent to their meeting without any royal summons, not a consequence of it. They did not assemble without writ, and then make the throne vacant; but the throne being previously vacant by the king's abdication, they assembled without writ, as they must do if they assembled at all. Had the throne been full, their meeting would not have been regular; but, as it was empty, such meeting became absolutely necessary. And accordingly it is declared by statute, 1 W. & M. ft. 1. c. 1. that this convention was really the two houses of parliament, notwithstanding the want of writs, or other defects of form. So that, notwithstanding these two capital exceptions, which were justifiable only on a principle of necessity (and each of which, by the way, induced a revolution in the government), the rule laid down is in general certain, that the king only can convoke a parliament. And this, by the ancient statutes of the realm, he is bound to do "every year, or oftener if need be." Not that he is, or ever was, obliged by these statutes to call a new parliament every year; but only to permit a parliament annually for the redress of grievances, and dispatch of business, *if need be*. These last words are so loose and vague, that such of our monarchs as were inclined to govern without parliaments, neglected the convoking them, sometimes for a very considerable period, under pretence that there was no need of them. But, to remedy this, by stat. 16 Car. II. c. 1. it is enacted, that the sitting and holding of parliaments shall not be intermitted above 3 years at the most. And by stat. 1 W. & M. ft. 2. c. 2. it is declared to be one of the rights of the people, that for redress of all grievances, and for the amending, strengthening, and preserving the laws, parliaments ought to be held frequently. And this indefinite frequency is again reduced to a certainty by stat. 6 W. & M. c. 2. which enacts, as the statute of Charles II. had done before, that the new parliament shall be called within 3 years after the determination of the former.

(6.) PARLIAMENT, CONSTITUENT PARTS OF. II. These are the king's majesty, sitting there in his royal political capacity, and the three estates of the realm; the lords spiritual, the lords temporal (who sit together with the king in one house), and the commons, who sit by themselves in another. And the king and these three estates together form the great corporation or body politic of the kingdom, of which the king is said to be *caput, principium, et finis*. For upon their coming together the king meets them, either in person or by representation;

representation, without which there can be no beginning of a parliament; and he also has alone the power of dissolving them. It is highly necessary for preserving the balance of the constitution, that the executive power should be a branch, though not the whole, of the legislature. The total union of them, we have seen, would be productive of tyranny; the total disjunction of them, for the present, would in the end produce the same effects, by causing that union against which it seems to provide. The legislature would soon become tyrannical, by making continual encroachments, and gradually assuming to itself the rights of the executive power. Thus the long parliament of Charles I. while it acted in a constitutional manner, with the royal concurrence, redressed many heavy grievances, and established many salutary laws. But when the two houses assumed the power of legislation, in exclusion of the royal authority, they soon after assumed likewise the reins of administration; and, in consequence of these united powers, overturned both church and state, and established a worse oppression than any they pretended to remedy. To hinder therefore any such encroachments, the king is himself a part of the parliament; and as this is the reason of his being so, very properly, therefore, the share of legislation which the constitution has placed in the crown, consists in the power of rejecting rather than resolving; this being sufficient to answer the end proposed. For we may apply to the *royal negative*, in this instance, what Cicero observes of the negative of the Roman tribunes, that the crown has not any power of doing wrong, but merely of preventing wrong from being done. The crown cannot begin of itself any alterations in the present established law; but it may approve or disapprove of the alterations suggested and consented to by the two houses. The legislature therefore cannot abridge the executive power of any rights which it now has by law, without its own consent; since the law must perpetually stand as it now does, unless all the powers will agree to alter it. And herein indeed consists the true excellence of the British government, that all the parts of it form a mutual check upon each other. In the legislature, the people are a check upon the nobility, and the nobility a check upon the people, by the mutual privilege of rejecting what the other has resolved; while the king is a check upon both, which preserves the executive power from encroachments. And this very executive power is again checked and kept within due bounds by the two houses, through the privilege they have of inquiring into, impeaching, and punishing the conduct (not indeed of the king, which would destroy his constitutional independence; but which is more beneficial to the public) of his evil and pernicious counsellors. Thus every branch of our civil polity supports and is supported, regulates and is regulated, by the rest: for the two houses naturally drawing in two directions of opposite interest, and the prerogative in another still different from them both, they mutually keep each other from exceeding their proper limits; while the whole is prevented from separation, and artificially connected together, by the mixed nature of the crown, which is a part of

the legislative, and the sole executive magistrate. Like three distinct powers in mechanics, they jointly impel the machine of government in a direction different from what either, acting by itself, would have done; but at the same time in a direction partaking of each, and formed out of all; a direction which constitutes the true line of the liberty and happiness of the community. See the articles KING, LORDS, and COMMONS.

(7.) PARLIAMENT, LAWS, CUSTOMS, AND POWER OF. The power and jurisdiction of parliament, says Sir Edward Coke, is so transcendent and absolute, that it cannot be confined either for causes or persons within any bounds. And of this high court he adds, it may be truly said, *Si antiquitatem spectes, est vetustissima; si dignitatem, est honoratissima; si jurisdictionem, est caputissima*. It hath sovereign and uncontrollable authority in making, confirming, enlarging, restraining, abrogating, repealing, reviving, and expounding of laws, concerning matters of all possible denominations, ecclesiastical or temporal, civil, military, maritime, or criminal; this being the place where that absolute despotic power, which must in all governments reside somewhere, is entrusted by the constitution of these kingdoms. All mischiefs and grievances, operations and remedies, that transcend the ordinary course of the laws, are within the reach of this extraordinary tribunal. It can regulate or new-model the succession to the crown, as was done in the reigns of Henry VIII. and William III. It can alter the established religion of the land; as was done in a variety of instances in the reigns of King Henry VIII. and his three children. It can change and create afresh even the constitution of the kingdom and of parliaments themselves; as was done by the act of union, and the several statutes for triennial and septennial elections. It can, in short, do every thing that is not naturally impossible; and therefore some have not scrupled to call its power, by a figure rather too bold, the *omnipotence of parliament*. True it is, that what the parliament doth, no authority upon earth can undo. So that it is a matter most essential to the liberties of this kingdom, that such members be delegated to this important trust as are most eminent for their probity, their fortitude, and knowledge; for it was a known apophthegm of the great lord treasurer Burleigh, "That England could never be ruined but by a parliament;" and, as Sir Matthew Hale observes, this being the highest and greatest court, over which none other can have jurisdiction in the kingdom, if by any means a misgovernment should anywise fall upon it, the subjects of this kingdom are left without all manner of remedy. Mr Locke, and other theoretical writers, have held, that "there remains still inherent in the people a supreme power to remove or alter the legislature, when they find the legislature act contrary to the trust reposed in them; for when such trust is abused, it is thereby forfeited, and devolves to those who gave it." But however just this conclusion may be in theory, we cannot adopt it, nor argue from it, under any dispensation of government at present actually existing. For this devolution of power to the people at large includes in it a dissolution of the whole form of government established by that people;

people; reduces all the members to their original state of equality; and by annihilating the sovereign power, repeals all positive laws whatsoever before enacted. No human laws, will, therefore, suppose a case, which at once must destroy all law, and compel men to build afresh upon a new foundation; nor will they make provision for so desperate an event, as must render all legal provisions ineffectual. So long therefore, as the English constitution lasts, we may venture to affirm, that the power of parliament is absolute, and without controul. To prevent the mischiefs that might arise, by placing this extensive authority in hands either incapable or improper to manage it, it is provided by the custom and law of parliament, that no one shall sit or vote in either house, unless he be 21 years of age. This is also expressly declared by stat. 7. and 8. W. III. c. 25: yet with regard to the house of commons, doubts have arisen from some contradictory adjudications, whether or not a minor was incapacitated from sitting in that house. It is also enacted by stat. 7. Jac. I. c. 6. that no member be permitted to enter the house of commons till he hath taken the oath of allegiance before the lord steward or his deputy: and by 30 Car. II. st. 2. and 1. Geo. I. c. 13. that no member shall vote or sit in either house, till he hath, in the presence of the house, taken the oaths of allegiance, supremacy, and abjuration, and subscribed and repeated the declaration against transubstantiation, and invocation of saints, and the sacrifice of the mass. Aliens, unless naturalized, were likewise by the law of parliament, incapable to serve therein: and now it is enacted, by stat. 12. and 13. W. III. c. 2. that no alien, even though he be naturalized, shall be capable of being a member of either house of parliament. And there are not only these standing incapacities, but if any person is made a peer by the king, or elected to serve in the house of commons by the people, yet may the respective houses, upon complaint of any crime in such person, and proof thereof, adjudge him disabled and incapable to sit as a member: and this by the law and custom of parliament. For as every court of justice hath laws and customs for its direction, some the civil and canon, some the common law, others their own peculiar laws and customs; so the high court of parliament hath also its own peculiar law, called the *lex et consuetudo parliamenti*; a law which Sir Edward Coke observes, is *ab omnibus querenda, a multis ignorata, a paucis cognita*. It will not therefore be expected that we should enter into the examination of this law with minuteness; since, as the same learned author assures us, it is much better to be learned out of the rolls of parliament and other records, and by precedents and continual experience, than can be expressed by any one man. The whole of the law and custom of parliament has its original from this one maxim, "That whatever matter arises concerning either house of parliament, ought to be examined, discussed, and adjudged in that house to which it relates, and not elsewhere." Hence, for instance, the lords will not suffer the commons to interfere in settling the election of a peer of Scotland; the commons will not allow the lords to judge of the election of a burges; nor will either house per-

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mit the subordinate courts of law to examine the merits of either case. But the maxima upon which they proceed, together with the method of proceeding, rest entirely in the breast of the parliament itself; and are not defined and ascertained by any particular stated laws. The privileges of parliament are likewise very large and indefinite; and therefore, when, in 31st Hen. VI. the house of lords propounded a question to the judges concerning them, the chief justice, Sir John Fortescue, in the name of his brethren, declared, "That they ought not to make answer to that question; for it hath not been used aforetime, that the justices should in anywise determine the privileges of the high court of parliament; for it is so high and mighty in its nature, that it may make law; and that which is law, it may make no law: and the determination and knowledge of that privilege belongs to the lords of parliament, and not to the justices." Privilege of parliament was principally established, in order to protect its members not only from being molested by their fellow-subjects, but also more especially from being oppressed by the power of the crown. If, therefore, all the privileges of parliament were once to be set down and ascertained, and no privilege to be allowed but what was so defined and determined, it were easy for the executive power to devise some new case, not within the line of privilege, and under pretence thereof to harass any refractory member, and violate the freedom of parliament. The dignity and independence of the two houses are therefore in a great measure preserved by keeping their privileges indefinite. Some, however, of the more notorious privileges of the member of either house, are, privilege of speech, of person, of their domestics, and of their lands and goods. As to the first, privilege of speech, it is declared by the statute 1 W. & M. stat. 2. c. 2. as one of the liberties of the people. "That the freedom of speech, and debates, and proceedings in parliament, ought not to be impeached or questioned in any court or place out of parliament." And this freedom of speech is particularly demanded of the king in person, by the speaker of the house of commons, at the opening of every new parliament. So likewise are the other privileges, of person, servants, lands, and goods; which are immunities as ancient as Edward the Confessor: in whose laws we find this precept, *Ad synodos venientibus, sine summonitiis sint, sine per se quid agendum habuerint, sit summa pax*; and so, too, in the old Gothic constitutions, *Extenditur hec pax et securitas ad quatuordecim dies, convocato regni senatu*. This included formerly not only privilege from illegal violence, but also from legal arrests and seizures by process from the courts of law. And still to assault by violence a member of either house, or his menial servants, is a high contempt of parliament, and there punished with the utmost severity. It has likewise peculiar penalties annexed to it in the courts of law, by stat. 5 Hen. IV. c. 6. and 11 Hen. VI. c. 11. Neither can any member of either house be arrested and taken into custody without a breach of the privilege of parliament. But all other privileges which derogate from the common law are now at an end, save only as to the freedom of the member's

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person;

person; which in a peer (by the privilege of peerage) is for ever sacred and inviolable; and in a commoner (by the privilege of parliament) for 40 days after every prorogation, and 40 days before the next appointed meeting; which is now in effect as long as the parliament subsists, it seldom being prorogued for more than 80 days at a time. As to all other privileges which obstruct the ordinary course of justice, they were restrained by the statutes 12 W. III. c. 3. 2 and 3 Ann. c. 18. and 11 Geo. II. c. 24. and are now totally abolished by statute 10 Geo. III. c. 50; which enacts, that any suit may at any time be brought against any peer or member of parliament, their servants, or any other person entitled to privilege of parliament; which shall not be impeached or delayed by pretence of any such privilege, except that the person of a member of the house of commons shall not thereby be subjected to any arrest or imprisonment. Likewise, for the benefit of commerce, it is provided by statute 4 Geo. III. c. 33. that any trader, having privilege of parliament, may be served with legal process for any just debt (to the amount of 100*l.*): and unless he makes satisfaction within two months, it shall be deemed an act of bankruptcy; and that commission of bankruptcy may be issued against such privileged traders in like manner as against any other. The only way by which courts of justice could anciently take cognizance of privilege of parliament, was by writ of privilege, in the nature of *superfideas*, to deliver the party out of custody when arrested in a civil suit. For when a letter was written by the speaker to the judges, to stay proceedings against a privileged person, they rejected it as contrary to their oath of office. But since the statute 12 Will. III. c. 3. which enacts, that no privileged person shall be subject to arrest or imprisonment, it hath been held, that such arrest is irregular *ab initio*, and that the party may be discharged upon motion. It is to be observed, that there is no precedent of any such writ of privilege, but only in civil suits; and that the statute of 1 Jac. I. c. 13. and that of King William, which remedy some inconveniences arising from privilege of parliament, speak only of civil actions. And, therefore, the claim of privilege hath been usually guarded with an exception as to the case of indictable crimes; or, as it hath been frequently expressed, of treason, felony, and breach of the peace. Whereby it seems to have been understood, that no privilege was allowable to the members, their families, or servants, in any *crime whatsoever*; for all crimes are treated by the law as being *contra pacem domini regis*. And instances have not been wanting, wherein privileged persons have been convicted of misdemeanors, and committed, or prosecuted to outlawry, even in the middle of a session; which proceeding has afterwards received the sanction and approbation of parliament. To which may be added, that about 30 years ago, the case of writing and publishing seditious libels, was resolved by both houses not to be entitled to privilege; and that the reasons upon which that case proceeded, extended equally to every indictable offence. So that the chief, if not the only privilege of parliament, in such cases, seems to be the right of receiving immediate

information of the imprisonment or detention of any member, with the reason for which he is detained; a practice that is daily used upon the slightest military accusations, preparatory to a trial by a court-martial; and which is recognized by the several temporary statutes for suspending the *habeas corpus* act: whereby it is provided, that no member of either house shall be detained, till the matter of which he stands suspected be first communicated to the house of which he is a member, and the consent of the said house obtained for his commitment or detaining. But yet the usage has uniformly been, ever since the Revolution, that the communication has been subsequent to the arrest. See KING, LORDS, and COMMONS.

(8.) PARLIAMENT, METHOD OF MAKING LAWS IN. IV. The method of proceeding, in enacting laws, is much the same in both houses. But for this, we refer the reader to the article BILL, § 10—12; and shall only observe in this place, that, for dispatch of business, each house of parliament has its speaker. The SPEAKER of the house of lords, whose office it is to preside there, and manage the formality of business, is the lord chancellor, or keeper of the king's great seal, or any other appointed by the king's commission; and if none be so appointed, the house of lords (it is said) may elect. The speaker of the house of commons is chosen by the house; but must be approved by the king. And herein the usage of the two houses differs, that the speaker of the house of commons cannot give his opinion or argue any question in the house; but the speaker of the house of lords, if a lord of parliament, may. In each house the act of the majority binds the whole; and this majority is declared by votes openly and publicly given; not, as formerly, at Venice, and many other senatorial assemblies, privately, or by ballot. This latter method may be serviceable, to prevent intrigues and unconstitutional combinations; but is impossible to be practised with us, at least in the house of commons, where every member's conduct is subject to the future censure of his constituents, and therefore should be openly submitted to their inspection.

(9.) PARLIAMENT, METHOD OF PROROGUING, ADJOURNING, AND DISSOLVING. V. i. AN ADJOURNMENT is no more than a continuance of the session from one day to another, as the word signifies; and this is done by the authority of each house separately every day; and sometimes for a fortnight or a month together, as at Christmas or Easter, or upon other particular occasions. But the adjournment of one house is no adjournment of the other. It has also been usual, when his Majesty hath signified his pleasure, that both or either of the houses should adjourn themselves to a certain day, to obey the king's pleasure so signified, and to adjourn accordingly. Otherwise besides the indecorum of a refusal, a prorogation would assuredly follow; which would often be very inconvenient to both public and private business. For prorogation puts an end to the session, and then such bills as are only begun, and not perfected, must be resumed *de novo* (if at all) in a subsequent session; whereas, after an adjournment all things continue in the same state as at the time of adjournment made, and may be proceeded on without

without any fresh commencement. ii. A PROROGATION is the continuance of the parliament from one session to another; as an adjournment is a continuation of the session from day to day. This is done by the royal authority, expressed either by the lord chancellor in his Majesty's presence, or by commission from the crown, or frequently by proclamation. Both houses are necessarily prorogued at the same time; it not being a prorogation of the house of lords or commons, but of the parliament. The session is never understood to be at an end until a prorogation; though, unless some act be passed, or some judgment given in parliament, it is in truth no session at all. And formerly the usage was, for the king to give the royal assent to all such bills as he approved at the end of every session, and then to prorogue the parliament, though sometimes only for a day or two; after which all business then depending in the houses was not to be begun again. Which custom obtained so strongly, that it once became a question, Whether giving the royal assent to a single bill did not of course put an end to the session? And though it was then resolved in the negative, yet the notion was so deeply rooted, that the statute 1 Car. I. c. 7. was passed to declare, that the king's assent to that and some other acts should not put an end to the session; and even so late as the reign of Charles II. we find a proviso frequently tacked to a bill, that his Majesty's assent thereto should not determine the session of parliament. But it now seems to be allowed, that a prorogation must be expressly made, in order to determine the session. And if at the time of an actual rebellion, or imminent danger of invasion, the parliament shall be separated by adjournment or prorogation, the king is empowered to call them together by proclamation, with 14 days notice of the time appointed for their reassembling. iii. A DISSOLUTION is the civil death of the parliament; and this may be effected three ways: 1. By the king's will, expressed either in person or by representation. For as the king has the sole right of convening the parliament, so also it is a branch of the royal prerogative, that he may (whenever he pleases) prorogue the parliament for a time, or put a final period to its existence. If nothing had a right to prorogue or dissolve a parliament but itself, it might become perpetual. And this would be extremely dangerous, if at any time it should attempt to encroach upon the executive power; as was fatally experienced by the unfortunate king Charles I.; who, having unadvisedly passed an act to continue the parliament then in being till such time as it should please to dissolve itself, at last left a sacrifice to that inordinate power which he himself had consented to give them. It is therefore extremely necessary, that the crown should be empowered to regulate the duration of these assemblies, under the limitations which the English constitution has prescribed; so that, on the one hand, they may frequently and regularly come together for the dispatch of business and redress of grievances, and may not, on the other, even with the consent of the crown, be continued to an inconvenient or unconstitutional length. 2. A parliament may be dissolved by the demise of the crown. This dis-

solution formerly happened immediately upon the death of the reigning sovereign: for he being considered in law as the head of the parliament, (*caput, principium, et finis*), that failing, the whole body was held to be extinct. But the calling a new parliament immediately on the inauguration of the successor being found inconvenient, and dangers being apprehended from having no parliament in being in case of a disputed succession, it was enacted by the statutes 7 and 8 W. III. c. 15. and 6 Ann. c. 7. that the parliament in being shall continue for six months after the death of any king or queen, unless sooner prorogued or dissolved by the successor; that if the parliament be, at the time of the king's death, separated by adjournment or prorogation, it shall notwithstanding assemble immediately: and that if no parliament is then in being, the members of the last parliament shall assemble, and be again a parliament. 3. Lastly, a parliament may be dissolved or expire by length of time. For if either the legislative body were perpetual, or might last for the life of the prince who convened them, as formerly, and were so to be supplied, by occasionally filling the vacancies with new representatives; in these cases if it were once corrupted, the evil would be past all remedy; but when different bodies succeed each other, if the people see cause to disapprove of the present, they may rectify its faults in the next. A legislative assembly also, which is sure to be separated again, (whereby its members will themselves become private men, and subject to the full extent of the laws which they have enacted for others), will think themselves bound, in interest as well as duty, to make only such laws as are good. The utmost extent of time that the same parliament was allowed to sit, by the statute 6 W. and M. c. 3. was three years: after the expiration of which, reckoning from the return of the first summons, the parliament was to have no longer continuance. But by stat. 1 Geo. I. st. 2. c. 38. (in order, professedly, to prevent the great and continued expences of frequent elections, and the violent heats and animosities consequent thereupon, and for the peace and security of the government then just recovering from the late rebellion), this term was prolonged to seven years; and, what alone is an instance of the vast authority of parliament, the very same house that was chosen for three years, enacted its own continuance for seven. So that, as our constitution now stands, the parliament must expire, or die a natural death, at the end of every seventh year, if not sooner dissolved by the royal prerogative.

(10.) PARLIAMENT, PECULIAR FORMS OBSERVED IN. In the house of LORDS, the princes of the blood sit by themselves on the sides of the throne; at the wall, on the king's right hand, the two archbishops sit by themselves on a form. Below them, the bishops of London, Durham, and Winchester, and all the other bishops, sit according to the priority of their consecration. On the king's left hand the lord treasurer, lord president, and lord privy-seal, sit upon forms above all dukes, except the royal blood; then the dukes, marquises, and earls, according to their creation. Across the room are wool-sacks, continued from an ancient custom; and the chancellor, or keeper

being of course the speaker of the house of lords, sits on the first wool-sack before the throne, with the great seal or mace lying by him; below these are forms for the viscounts and barons. On the other wool-sacks are seated the judges, masters in chancery, and king's council, who are only to give their advice in points of law: but they all stand up till the king gives them leave to sit. 2. The commons sit promiscuously; only the speaker has a chair at the upper end of the house, and the clerk and his assistant sit at the table near him. When a member of the house of commons speaks, he stands up uncovered, and directs his speech to the speaker only. If what he says be answered by another, he is not allowed to reply the same day, unless personal reflections have been cast upon him: but when the commons, in order to have a greater freedom of debate, have resolved themselves into a committee of the whole house, every member may speak to a question as often as he thinks necessary. In the house of lords they vote, beginning at the peer, or lowest baron, and so up orderly to the highest, every one answering, *Content* or *Not content*. In the house of commons they vote by *yeas* and *nays*; and if it be dubious which are the greater number, the house divides. If the question be about bringing any thing into the house, the *yeas* go out; but if it be about any thing the house already has, the *nays* go out. In all divisions the speaker appoints 4 tellers, two of each opinion. In a committee of the whole house, they divide by changing sides, the *yeas* taking the right and the *nays* the left of the chair; and then there are but two tellers. If a bill pass one house, and the other demur to it, a conference is demanded in the painted chamber, where certain members are deputed from each house; and here the lords sit covered, and the commons stand bare, and debate the case. If they disagree, the affair is null; and if they agree, this, with the other bills that have passed both houses, is brought down to the king in the house of lords, who comes thither clothed in his royal robes; before him the clerk of the parliament reads the title of each bill, and as he reads, the clerk of the crown pronounces the royal assent or dissent. If it be a public bill, the royal assent is given in these words, *Le roy le veut*. The king will have it so; if private, *Soit fait comme il est désiré*. Let the request be complied with; if the king refuses the bill, the answer is *Le roy s'aviserá*. The king will think of it; and if it be a money-bill, the answer is, *Le roy remercie ses loyaux sujets, accepte leur benevolence, et aussi le veut*; The king thanks his loyal subjects, accepts their benevolence, and therefore grants his consent.

(II.) PARLIAMENT, THE HIGH COURT OF, is the supreme court in the kingdom, not only for the making, but also for the execution, of laws, by the trial of great and enormous offenders, whether lords or commons, in the method of parliamentary impeachment. As for acts of parliament to attain particular persons of treason or felony, or to inflict pains and penalties, beyond or contrary to the common law, to serve a special purpose, we speak not of them; being to all intents and purposes new laws, made *pro re nata*, and

by no means an execution of such as are already in being. But an impeachment before the lords by the commons of Great Britain, in parliament, is a prosecution of the already known and established law, and has been frequently put in practice; being a presentment to the most high and supreme court of criminal jurisdiction by the most solemn grand inquest of the whole kingdom. A commoner cannot, however, be impeached before the lords for any capital offence, but only for any high misdemeanors; a peer may be impeached for any crime. And they usually (in case of any impeachment of a peer for treason) address the crown to appoint a lord high steward, for the greater dignity and regularity of their proceedings; which high steward was formerly elected by the peers themselves, though he was generally commissioned by the king; but it hath of late years been strenuously maintained, that the appointment of a high steward in such cases is not indispensably necessary, but that the house may proceed without one. The articles of impeachment are a kind of bills of indictment, found by the house of commons, and afterwards tried by the lords; who are in cases of misdemeanors considered, not only as their own peers, but as the peers of the whole nation. This is a custom derived to us from the constitution of the ancient Germans; who in their great councils sometimes tried capital accusations relating to the public: *Licet apud concilium accusare quoque, et discri-men capitis intendere*. And it has a peculiar propriety in the English constitution; which has much improved upon the ancient model imported hither from the continent. For though in general the union of the legislative and judicial powers ought to be most carefully avoided, yet it may happen that a subject, intrusted with the administration of public affairs, may infringe the rights of the people, and be guilty of such crimes as the ordinary magistrate either dares not or cannot punish. Of these the representatives of the people, or house of commons, cannot properly judge; because their constituents are the parties injured, and can therefore only impeach. But before what court shall this impeachment be tried? Not before the ordinary tribunals, which would naturally be swayed by the authority of so powerful an accuser. Reason therefore will suggest, that this branch of the legislature, which represents the people, must bring its charge before the other branch, which consists of the nobility, who have neither the same interests, nor the same passions, as popular assemblies. This is a vast superiority which the constitution of this island enjoys over those of the Grecian or Roman republics; where the people were at the same time both judges and accusers. It is proper that the nobility should judge, to insure justice to the accused; as it is proper that the people should accuse, to insure justice to the commonwealth. And therefore, among other extraordinary circumstances attending the authority of this court, there is one of a very singular nature, which was insisted on by the house of commons, in the case of the earl of Danby in the reign of Charles II. and is now enacted by statute 12 & 13 W. III. c. 2. that no pardon under the great seal shall be pleadable to

an impeachment by the commons of Great Britain in parliament. Such is the nature of a British parliament, and in theory at least we should presume it were nearly perfect; but some of our fellow-countrymen, more zealous perhaps than wise, see prodigious faults in it, such indeed as they think must inevitably prove fatal. The consequence of this persuasion has been a loud and incessant call for parliamentary reform. That abuses ought to be reformed, is certain, and that few institutions are so perfect as not to need amendment, is a fact equally indisputable. We shall even suppose, that there are many abuses in our parliament which would require to be amended; but granting all this and something more if it were necessary, we would recommend in the mean time to the serious consideration of those who call themselves the *Friends of the People*, whose sincerity in their professions it would be unpolite to question, the example of France, and that they would allow it to be a warning to Britain. France wanted reform indeed, and that which was first proposed had the countenance of the coolest and the best of men; but the consequences have been dreadful; and instead of establishing LIBERTY and EQUALITY, have ended in the most absolute and uncontrolled DESPOTISM, ever established in any nation; now rendered *Imperial and hereditary in the house of Bonaparte*.

(12.) PARLIAMENT, THE LATE FRENCH. The ci-devant Parliaments of France were sovereign courts established by the king, finally to determine all disputes between particular persons, and to pronounce on appeals from sentences given by inferior judges.—There were ten of these parliaments in France, of which that of Paris was the chief, its privileges and jurisdiction being of the greatest extent. It consisted of eight chambers, where causes of audience were pleaded; the chamber of written law; the chamber of counsel; the Tournelle criminelle, for judging criminal affairs; the Tournelle civile, in aid of the grand chamber; and three chambers of inquests, where processes were adjudged in writing: besides these, there was also the chamber of vocations, and those of requests. In 1771 the king thought fit to branch the Parliament of Paris into six different parliaments, under the denomination of superior courts, each parliament having similar jurisdiction. Under their second race of kings, this parliament, like that of England, was the king's council, it gave audience to ambassadors, and consulted of the affairs of war and government. The king, like ours, at that time presided in them, without being at all master of their resolutions. But in after times their authority was abridged; as the kings reserved the decision of the grand affairs of the public to their own councils; leaving none but private ones to the parliaments. The parliament of Paris also enjoyed the privileges of verifying and registering the king's arrests or edicts, without which those edicts were of little or no value.

(13.) PARLIAMENT, THE SWEDISH, consists of four estates, with the king at their head. These estates are, 1. The nobility and representatives of the gentry; with whom the colonels, lieutenant-colonels, majors and captains of every regiment,

fit and vote. 2. The clergy; one of which body is elected from every rural deanery of ten parishes; who, with the bishops and superintendents amount to about 200. 3. The burghers, elected by the magistrates and council of every corporation as their representatives; of whom there are four for Stockholm, and two for every other town, amounting in the whole to about 150. 4. The peasants chosen by the peasants out of every district, who choose one of their own rank, and not a gentleman to represent them; these amount to about 250. All these generally meet at Stockholm: and after the state-affairs have been represented to them from the throne, they separate and sit in four several chambers or houses, in each of which affairs are carried on by majority of votes; and every chamber has a negative in the passing any law.

(1.) * PARLIAMENTARY. *adj.* [from *parliament*] Enacted by parliament; pertaining to parliament.—To the three first titles of the two houses, or lines, and conquest, were added two more; the authorities *parliamentary* and *papal*. Bacon.—Many things, that obtain as common law, had their original by *parliamentary* acts Hale.—Credit to run ten millions in debt, without *parliamentary* security, I think to be dangerous and illegal. Swift.

(2.) PARLIAMENTARY REFORM BILL. See ENGLAND, § 113.

* PARLOUR. *n. f.* [*parloir*. Fr. *parlatoir*, Ital.]

1. A room in monasteries, where the religious meet and converse. 2. A room in houses on the first floor, elegantly furnished for reception or entertainment.—Can we judge it a thing seemly for a man to go about the building of an house to the God of heaven, with no other appearance than if his end were to rear up a kitchen or a *parlour* for his own use? Hooker.—

Back again fair Alma led them right,
And soon into a goodly *parlour* brought. Spens.
—It would be infinitely more shameful, in the dress of the kitchen, to receive the entertainments of the *parlour*. South.

Roof and sides were like a *parlour* made. Dryd.
The first, forgive my verse if too diffuse,
Perform'd the kitchen's and the *parlour's* use.

Harte.
* PARLOUS. *adj.* [This might seem to come from *parler*, Fr. to speak; but Junius derives it, I think, rightly, from *perilous*, in which sense it answers to the Latin *improbus*.] Keen; sprightly; waggish.—

One must be trusted, and he thought her fit,
As passing prudent, and a *parlous* wit. Dryden.

* PARLOUSNESS. *n. f.* [from *parlous*.] Quickness; keenness of temper.

(1.) PARMA, a duchy or province of Italy, bounded on the N. by the Po; on the NE. by the late Mantuan, now the department of the Mincio, in the kingdom of Italy; on the E. by the ci-devant duchy of Modena, now the dep. of Panaro, on the S. by Tuscany, and on the W. by the duchy of Placentia. In the midst of all the surrounding changes, this duchy has undergone no change in its political constitution, government or geographical division, though such were threatened; but the duke made peace with the French republic on the 25th Oct. 1796. The air is very wholesome, on which account the inhabitants live to

to a great age. The soil is very fertile in corn, wine, oil, and hemp; the pastures feed a great number of cattle, and the cheese is in very high esteem. Here are considerable mines of copper and silver, and plenty of truffles. See **PARMESAN**, N° 1.

(2.) **PARMA**, an ancient, rich, populous, and handsome city of Italy capital of the above duchy, with a citadel, a bishop's see, and an university. It has a magnificent cathedral, and the largest opera-house in Europe, which has seats for 12,000 spectators; but as it required a vast number of candles, which occasioned great expense, they have contrived another which has room for 2000 spectators. The dome and the church of St John are painted by the famous Corregio, who was a native. Charles III. king of the two Sicilies, carried away the library to Naples, which contained 18,000 volumes, and a very valuable cabinet of curiosities, as also the rich collection of medals. The citadel, which is very near the city, is built in the same taste as that at Antwerp. In 1734, there was a bloody battle fought here; and in 1741, by the treaty of Aix-la-Chapelle, the duchies of Parma, Placentia, and Guastalla, were given to Philip, brother to Charles above mentioned. The principal streets meet in the centre, and form a handsome square. The new palace is built on the site of the old. It has 5 collegiate and 30 parish churches, besides the cathedral of St John. Its chief manufacture is silk stockings, and some other articles in silk. It was famous for printing, and the books printed by Bodoni are remarkably beautiful. Parma, from its first foundation by the ancient Etrurians, has never changed its name. The population is estimated by Mr Martyn, at 37,000; by Berenger at 45,000. It is 32 miles SW. of Mantua: 60 SE. of Milan, and 60 SE. of Cremona. Lon. 10. 30. E. Lat. 44. 47. N.

(3.) **PARMA**, a river of Italy, which rises in the S. part of the duchy, (N° 1.) near Etruria; divides the city of Parma, (N° 2.) into three parts, which were connected by two bridges over these branches; and falls into the Po, near Viadna.

(4.) **PARMA**. See **PARMESAN**, N° 1.

* **PARMACITY**. *n. f.* Corruptedly for *sperma ceti*. *Ainsworth.*

PARMANI, or } the ancient inhabitants of
PARMANENSES, } **PARMA**.

PARMENIDES, an ancient Greek philosopher, born in Elis, about A. A. C. 505. He studied under Xenophanes, or Anaximander. He taught that there were only two elements, fire and earth; and that the first generation of men was produced from the sun. Along with these and other absurdities, he taught some philosophical truths: He first discovered that the earth is round, but he placed it, like Ptolemy, in the centre of the Solar System. He put his system into verse; and Fragments of it were collected by Henry Stephanus, and published under the title of *De Poet. Philosophica*.

PARMENIO, a celebrated and popular general, in the army of Alexander the Great, who long enjoyed that prince's confidence, and was more attached to his person as a man than as a monarch. Yet in a moment of suspicion, excited by false information, Alexander ordered this faithful friend to be put to death, in his 70th year, along

with his son. Plutarch remarks, that Parmenio gained many victories without Alexander, but Alexander not one without Parmenio.

PARMENTIER, John, a celebrated French navigator, born at Dieppe, in 1494. He was the first pilot who conducted vessels to Brazil, and the first Frenchman who discovered the Indies as far as Sumatra. He was a good astronomer, and laid down several excellent maps. He died at Sumatra, in 1530.

(1.) **PARMESAN**, the duchy of **PARMA**, in its most extensive sense; including not only the city and duchy of Parma Proper, (see **PARMA** N° 1. & 2.) but also those of Guastalla and Placentia. (See **PLACENTIA**.) It extends 40 miles from N. to S. and from 30 to 48, from E. to W. This country once formed a small republic; but afterwards fell successively under the popes, the emperors, the dukes of Milan, and the French, upon whose expulsion out of Italy, it was re-united to the Papal dominions. In 1345, Paul III. gave it to his natural son, Peter Alcyfius Farnese; from whom the princes of that family descended. Of these the most celebrated was prince Alexander. (See **ALEXANDER**, N° 32.) The princess Elizabeth Farnese, daughter of duke Edward, being married to K. Philip V. of Spain, in 1714, became heiress of Parma, in 1720, on the death of her uncle Prince Francis; and her son Philip succeeded in 1748.

(2.) **PARMESAN**, *adj.* Of or belonging to Parma.

(3.) **PARMESAN CHEESE**, a sort of cheese much esteemed among the Italians; so named from the duchy of Parma where it is made, and whence it is conveyed to various parts of Europe. The cows from whose milk this cheese is made yield a great quantity of it. Of this cheese there are 3 sorts; the *fromaggio di forma*, about two palms in diameter, and 7 or 8 inches thick; and the *fromaggio di ribole* and *di ribolini*, which are not so large. It is of a saffron colour; and the best is kept 3 or 4 years. See **CHEESE**, § 4.

PARMIGIANO, a celebrated painter, whose true name was Francis MAZZUOLI; but he was named *Parmigiano*, from Parma, where he was born, in 1504. He was educated under his two uncles, and was an eminent painter when but 16 years of age. He was famous all over Italy at 19; and at 23 performed such wonders, that when the general of Charles V. took Rome by storm, some of the soldiers, having, in sacking the town, broke into his apartments, found him intent upon his work, and were instantly so struck with the beauty of his pieces, that instead of involving him in the plunder and destruction in which they were then employed, they resolved to protect him from all manner of violence; which they actually performed. His works are distinguished by the beauty of the colouring, invention, and drawing. His figures are spirited and graceful, particularly with respect to attitude, and dresses. He also excelled in music, in which he much delighted. His paintings in oil are few, but held in high esteem, as are also his drawings and etchings. He was the first that practised etching in Italy. At Rome he was employed by pope Clement VII. who was highly pleased with his performances, and rewarded him liberally. In the Houghton collection of pictures, now in possession of the emperor of Rus-

gia

fia, is one of his best pictures, representing Christ laid in the sepulchre, for which he is said to have been knighted by the duke of Parma. His principal works are at Parma, where he died poor in 1540.

PARMILLIEU, a town of France, in the dep. of the Sèvre, 24 miles ENE. of Lyons.

PARNASSIA, genus of Parnassus, in botany, a genus of the tetragynia order, belonging to the pentandria class of plants. The calyx is quinque-partite; there are five petals, and as many nectaria, heart-shaped, and ciliated with globular tops; the capsule quadrivalved. There is but one species, having a stalk about a foot high, angular, and often a little twisted, bearing a single white flower at top. The flowers are very beautifully streaked with yellow; so that though it is a common plant, growing naturally in moist pastures, it is frequently admitted into gardens.

PARNASSO, in modern geography, a mountain of European Turkey, in Livadia, 8 miles N. of Livadia; much celebrated by the poets, under its ancient name

PARNASSUS, in ancient geography, a mountain of Phocia, near Delphi, and the mounts Cithæron and Helicon, with two tops; the one called *Cirrhæ*, sacred to Apollo; and the other *Nysa*, sacred to Bacchus. It was covered with bay trees, and originally called *Larnassus*, from Deucalion's larnax or ark, thither conveyed by the flood; after the flood, *Parnassus*, from Har Nahas, changing the *h* into *p*, the hill of divination or augury; the oracle of Delphi standing at its foot. (*Strabo. Pind. Virg. Juv. Steph. Peucerus.*) Dr Chandler, who visited it, thus describes it, in his Travels in Greece: "Parnassus was the western boundary of Phocia, and stretching N. from about Delphi toward the Cætan mountains, separated the western Locri from those who possessed the sea-coast before Eubœa. It was a place of refuge to the Delphians in times of danger. In the deluge which happened under Deucalion, the natives were saved on it. On the invasion by Xerxes, some transported their families to Achaia, but many concealed them in this mountain, and in Corycium, a grotto of the nymphs. All Parnassus was renowned for sanctity, but Corycium was the most noted among the hallowed caves and places. 'On the way to the summits of Parnassus, says Pausanias, 60 stadia beyond Delphi, is a brazen image; and thence the ascent to Corycium is easier for a man on foot than for mules and horses. Of all the caves in which I have been, this appeared to me the best worth seeing. On the coasts, and by the sea-side, are more than can be numbered; but some are very famous both in Greece and in other countries. The Corycian cave exceeds in magnitude those I have mentioned, and for the most part may be passed through without a light. It is sufficiently high, and has water, some springing up, and yet more from the roof, which petrifies; so that the bottom of the whole cave is covered with sparry icicles. The inhabitants of Parnassus esteem it sacred to the Corycian nymphs, and to Pan.—From the cave to reach the summit of the mountain is difficult even to a man on foot. The summits are above the clouds, and the women called *Thyades* madden on them in the rites of Bacchus and Apol-

lo.' Their frantic orgies were performed yearly. Wheler and his company ascended Parnassus from Delphi, some on horses, by a track between the Stadium and the clefts of the mountain. Stairs were cut in the rock, with a straight channel, perhaps a water-duct.—In a long hour, after many traverses, they gained the top, and entering a plain, turned to the right, towards the summits of Castalia, which are divided by deep precipices. From this eminence they had a fine prospect of the gulf of Corinth, and of the coast; mount Cirphis appearing beneath them as a plain, bounded on the E. by the bay of Asprospitia, and on the W. by that of Salona. They returned to the way they had quitted, and crossed a hill, covered with pines and snow. On their left was a lake, and beyond it a peak, exceedingly high, white with snow. They travelled to the foot of it through a valley, 4 or 5 miles in compass; and rested by a plentiful fountain called *Drosonigo*, the stream boiling up a foot in diameter, and nearly as much above the surface of the ground. It runs into the lake, about a quarter of a mile to the SE. They did not discover Corycium, or proceed farther on; but keeping the lake on their right, came again to the brink of the mountain, and defended by a deep and dangerous track to Racovi, a village 4 or 5 miles E. of Delphi. It was the opinion of Wheler, that no mountain in Greece was higher than Parnassus; that it was not inferior to mount Cenis among the Alps; and that, if detached, it would be seen at a greater distance than even mount Athos. The summits are perpetually increasing, every new fall of snow adding to the perennial heap, while the sun has power only to thaw the superficies. Castalis Pleistis and innumerable springs are fed, some invisibly, from the lakes and reservoirs, which, without these drains and subterraneous vents, would swell, especially after heavy rain and the melting of snow, so as to fill the valleys, and run over the tops of the rocks down upon Delphi, spreading wide an inundation, similar, as has been surmised, to the Deucalionian deluge."

PARNE, a town of France, in the department of Mayenne; 6 miles SE. of Laval.

* PARNEL. *n. f.* [The diminutive of *petronella*.] A punk; a slut. Obsolete. *Skinner*.

PARNELL, Dr Thomas, a very ingenious divine and poet, born at Dublin in 1679. He was educated at Trinity College, and in 1700 took his degree of M. A. In 1706, he came to England, and was much respected by Gay, Swift, Arbuthnot, &c. He was archdeacon of Clogher, and the intimate friend of Mr Pope; who published his *Hermis* and other works, with commendatory verses prefixed. He died in 1718, aged 39.

PARNES, a mountain of Africa, abounding in vines. *Stat. Theb. v. 620.*

PARNESSUS, a mountain of Asia, near Bactriana. *Dionys. Per. 737.*

PARNI, an ancient nation of Scythia, who invaded Parthia. *Strabo, xi.*

PARNOT, a town of France, in the dep. of Upper Marne; 5 miles NW. of Bourbonne.

* PAROCIAL. *adj.* [*parochialis*, from *parochia*, low Lat.] Belonging to a parish.—The married state of *parochial* pastors hath given them the opportunity,

opportunity of setting a more exact and universal pattern of holy living, to the people committed to their charge. *Atterbury.*

PARODICAL DEGREES, in an equation, a term used to denote the several regular terms in a quadratic, cubic, biquadratic, &c. equation, when the indices of the powers ascend or descend orderly in an arithmetical progression. Thus $x^1 + m x^2 + n x =$ is a cubic equation, where no term is wanting, but having all its parodic degrees; the indices of the terms regularly descending thus, 3, 2, 1, 0.

(1.) * **PARODY**. *n. f.* [*parodie*, Fr. *parodie*.] A kind of writing, in which the words of an author or his thoughts are taken, and, by a slight change, adapted to some new purpose.—The imitations of the ancients are added together with some of the *parodies* and allusions to the most excellent of the moderns. *Pope's Dunciad.*

(2.) **PARODY** is also used for a popular maxim, adage, or proverb.

(3.) **PARODY**, in poetry, (§ 1.) consists in applying the verses written on one subject, by way of ridicule, to another; or in turning a serious work into a burlesque, by affecting to observe as near as possible the same rhymes, words, and cadences. The parody was first set on foot by the Greeks, from whom we borrow the name. It comes near to what some of our late writers call **TRAVESTY**. Others have more accurately distinguished between a parody and burlesque; and they observe, that the change of a single word may parody a verse, or of a single letter a word. Thus, in the last case, Cato exposed the inconstant disposition of Marcus Fulvius Nobilior, by changing Nobilior into Mobilior. Another kind of parody consists in the mere application of some known verse, or part of a verse, of a writer, without making any change in it, with a view to expose it. A 4th instance is that of writing verses in the taste and style of authors little approved. The rules of parody regard the choice of a subject, and the manner of treating it. The subject should be a known and celebrated work; as to the manner, it should be by an exact imitation, and an intermixture of good natural pleasantry.

* To **PARODY**. *v. a.* [*parodier*, Fr. from *parody*.] To copy by way of parody.—I have translated, or rather *parodied*, a poem of Horace, in which I introduce you advising me. *Pope.*

PARO-HOTUN, a town of Chinese Tartary, 288 miles NNE. of Peking. Lon. 136. 33. E Ferro. Lat. 44. 2. N.

(1.) * **PAROLE**. *n. f.* [*parole*, French.] Word given as an assurance; promise given by a prisoner not to go away.—

Love's votaries enthrall each other's soul,
'Till both of them live but upon *parole*.

Cleaveland.

—I have a scruple whether you can keep your *parole*, if you become a prisoner to the ladies. *Swift.*

(2.) **PAROLE** means also a word given out every day in orders by the commanding officer, both in camp and garrison, in order to know friends from enemies.

(1.) * **PARONOMASIA**. *n. f.* [*παρωνομασία*.] A rhetorical figure, in which, by the change of a let-

ter or syllable, several things are alluded to. It is called in Latin *agnominatio*. *Diſt.*

(2.) **PARONOMASIA** signifies also a pun. See **ORATORY**, § 212.

(1.) * **PARONYCHIA**. *n. f.* [*παρωνυχία*; *paronychie*, Fr.] A preternatural swelling or fore under the root of the nail in one's finger; a felon; a whitlow. *Diſt.*

(2.) **PARONYCHIA**, the **WHITLOW**, in surgery, is an abscess at the end of the fingers. According as it is situated more or less deep, it is differently denominated, and divided into species. It begins with a slow heavy pain, attended with a slight pulsation, without swelling, redness, or heat; but soon the pain, heat, and throbbing, are intolerable; the part grows large and red, the adjoining fingers and the whole hand swell up; in some cases, a kind of red and inflamed streak may be observed, which, beginning at the affected part, is continued almost to the elbow; nor is it unusual for the patient to complain of a very sharp pain under the shoulder, and sometimes the whole arm is excessively inflamed and swelled; the patient cannot sleep, the fever, &c. increasing; and sometimes delirium or convulsions follow. 1. When it is seated in the skin or fat, in the back or the fore part of the finger, or under or near the nail, the pain is severe, but ends well. 2. When the periosteum is inflamed or corroded, the pain is tormenting. 3. When the nervous coats of the flexor tendons of the fingers, or nerves near them, are seized, the worst symptoms attend. If the first kind suppurates, it must be opened, and treated as abscesses in general; but the best method of treating the other two species is, on the first, or at furthest the second day, to cut the part where the pain is seated quite to the bone: if this operation is longer deferred, a suppuration will come on; in which case suppuration should be speedily promoted, and as early a discharge given to the matter as possible. As the pain is so considerable as to occasion a fever, and sometimes convulsions, the first, &c. may be added to the suppurating applications, and also given in a draught at bed time. The 2d species proves very troublesome, and sometimes ends in a caries of the subjacent bone. The 3d species is very tedious in the cure, and usually the phalanx on which it is seated is destroyed.

* **PARONYMOUS**. *adj.* [*παρωνυμος*.] Resembling another word.—Shew your critical learning in the etymology of terms, the synonymous and the *paronymous* or kindred names. *Watts.*

PAROPAMISUS, in ancient geography, a ridge of mountains and an extensive territory in the N. of India, which took Alexander the Great and his army 16 days to cross it. (See **MACEON**, § 14.) It is now called the *Indian Caucasus*, and part of it *Stony Girdle*.

PAROPUS, a town of Sicily, on the N. coast; now called *Colifano*. *Polyb.* i. 24.

(1.) * **PAROQUET**. *n. f.* [*parroquet*, or *perroquet*, Fr.] A small species of parrot.—The great, red, and blue, are parrots; the middlemost called *popinjays*; and the lesser, *paroquets*. *Grev.*—

I would not give my *parquet*

For all the doves that ever flew.

Prior.

(2.) **PAROQUET**. See **PEITACUS**.

PAROREIA,

PAROREIA, in ancient geography: 1. A town of Thrace, near mount Hæmus: (*Liv.* 39. c. 27.) 2. A town of Peloponnesus: 3. A district of Phrygia. *Strabo* xii.

(1.) PAROS, in ancient geography, an island of the Ægean sea, one of the Cyclades, 38 miles from Delos; anciently called *PACTE* and *Minoa*; also *Demetrias*, *Zacynthus*, *Hyria*, *Hylefsea*, and *Cabarnus*. It was the country of Archilochus, the Iambic poet, and famous for its white marble, called *lychnites*, because dug with lamps. The name of Cabarnus is derived, according to Stephanus, from one Cabarnus, who informed Ceres of the rape of her daughter Proserpine; or, according to Hefychius, from the Cabarni, the priests of Ceres, so called by the Parians. The name of Minoa is borrowed from Minos king of Crete, who subdued this, as he did most of the other islands of the Ægean sea. It was called *Paros*, which name it retains to this day, from Paros the son of Parhasius, or of Jason the Argonaut. Paros, according to Pliny, is $\frac{7}{8}$ miles from Naxos, and 28 from Delos. Some modern travellers will have it to be 80, others only 50 miles in compass. Pliny says it is half as large as Naxos, that is, 36 miles in compass. Dr Brookes says, it is 10 miles long, and 8 broad. It was a rich and powerful island, being reckoned the most wealthy of the Cyclades. (*Pliny, Nepos, Strab. Nicom., Virg. Hor. Ovid.*) It is provided with several capacious and safe harbours, and was anciently much resorted to by traders. It was, according to Thucydides, originally peopled by the Phœnicians, who were the first masters of the sea. Afterwards the Carians settled here. Thucydides says, the Carians were driven out by the Cretans under Minos; but Diodorus writes, that the Carians did not settle here till after the Trojan war, when they found the Cretans in the island. Stephanus thinks that the Cretans, mixed with some Arcadians, were the only people that ever possessed this island. Minos himself, Pliny says, resided some time in this island, and received here the news of the death of his son Androgeus, who was killed in Attica after he had distinguished himself at the public games. The Parians were chosen from among all the Greeks by the Milesians to compose the differences which had rent that state into factions. They acquitted themselves with great prudence, and reformed the government. They assisted Darius in his expedition against Greece with a considerable squadron; but after the victory obtained by Miltiades at Marathon, they were reduced to great straits by that general. However, after blocking up the city for 26 days, he was obliged to quit the enterprize, and return to Athens with disgrace. After the battle of Salamis, Themistocles subjected Paros and most of the neighbouring islands to Athens, exacting large sums from them for having favoured the Persians. It appears from the famous monument of Adulus, which Cosmus of Egypt has described with great exactness, that Paros and the other Cyclades were once subject to the Ptolemies of Egypt. However, Paros fell again under the power of the Athenians, who continued masters of it till they were driven out by Mithridates the Great. But that prince being obliged

to yield to Sylla, Lucullus, and Pompey, this and the other islands of the Archipelago submitted to the Romans, who reduced them to a province with Lydia, Phrygia, and Caria. The Romans made this place their grand arsenal; their powder magazines, and several other buildings, are still standing; and the island is indebted to them for improving the convenience for water, and for the trade which the cash they expended introduced among the inhabitants. It lies near to Naxia.

(2.) PAROS, the metropolis of the above island is styled by Stephanus a potent city, and one of the largest in the Archipelago. The present city of Paros, now *PARICHIA*, is built upon its ruins; the country abounding with valuable monuments of antiquity. The very walls are built with columns, architraves, pedestals, mingled with pieces of ancient marble of a surprising magnitude, which were once employed in more noble edifices. Paros was indeed formerly famous for its marble, which was of an extraordinary whiteness, and in such request among the ancients that the best statues used no other. The celebrated statues *Phidias* and *Praxiteles* were born in it; and the authenticity of its marble chronicle is now established. See *ARUNDELIAN MARBLES*; and *PARIAN CHRONICLE*. The city lies on the W. coast. *Lon.* 25. 44. E. *Lat.* 37. 8. N.

(1.) * PAROTID. *adj.* [*parotide*, Fr. *parotide* *parota* and *para*.] Salivary: so named because near the ears.—Beasts and birds, having one common use of spittal, are furnished with the *parotid glands*, which help to supply the mouth with it. *Grew.*

(2.) PAROTID GLANDS, or the PAROTIDES, See *ANATOMY, Index*.

* PAROTIS. *n. f.* [*parotid*.] A tumour in the glandules behind and about the ears, generally called the emunctories of the brain; though, indeed, they are the external fountains of the saliva of the mouth. *Wise.*

* PAROXYSM. *n. f.* [*παροξυσμος*; *paroxysme*, Fr.] A fit; periodical exacerbation of a disease.—I fancied to myself a kind of ease, in the change of the *paroxysm*. *Dryden*.—Amorous girls, through the fury of an hyteric *paroxysm*, are cast into a trance for an hour. *Harvey*.—The greater distance of time there is between the *paroxysms*, the fever is less dangerous, but more obstinate. *Arbuthnot*.

PARPAILLOTS, a name given to the Calvinists in France. See *CALVINISM*.

PARQUIMANS, a county of N. Carolina, in Edenton district, bounded on the N. by Virginia, E. by the Pasquotank, S. by Albemarle Sound, and W. by Chowan county. In 1795, it contained 3560 citizens, and 1878 slaves. A county-court is held at the Court-house the 2d Monday of February, May, August, and November.

(1.) PARR, Catharine, was the eldest daughter of Sir Thomas Parr of Kendall. She was first married to John Nevill, Lord Lutymer; after whose death she so captivated K. Henry VIII. that he raised her to the throne. The royal nuptials were solemnized at Hampton Court on the 13th of July 1534. Being religiously disposed, she was, in the early part of her life, a zealous observer of the Romish rites and ceremonies; but, in the dawning of the Reformation, she became as zealous

lous a promoter of the Lutheran doctrine; yet with such prudence and circumspection as her perilous situation required. In such danger was she at one time, that the king had actually signed a warrant for committing her to the tower. She had art enough to restore herself to his good graces. The king died in January 1547, just 3½ years after his marriage with his 3d Catharine; who in a short time was again espoused to Sir Thomas Seymour lord-admiral of England; for in September 1548 she died in childbed. The historians of this period generally insinuate, that she was poisoned by her husband, to make way for his marriage with the lady Elizabeth. That Catharine Parr was beautiful, is beyond a doubt; that she was pious and learned, is evident from her writings; and that her prudence and sagacity were not inferior to her other accomplishments, may be concluded from her holding up the passion of a capricious tyrant as a shield against her enemies; and that at the latter end of his days, when his passions were enfeebled by age, and his peevish austerity increased by disease. She wrote, 1. *Queen Catharine Parr's lamentation of a sinner, bewailing the ignorance of her blind life*; Lond. 8vo, 1548, 1563. 2. *Prayers or meditations, wherein the mynd is stirred patiently to suffer all afflictions here, to set at nought the vain prosperities of this world, and always to long for the everlasting felicity*. Collected out of holy works, by the most virtuous and gracious princeesse, Katharine, queene of Englande, France, and Irelande. Printed by J. Wayland, 1543, 4to, —1561, 12mo. 3. *Other Meditations, Prayers, Letters, &c.* unpublished.

(2.) PARR, Thomas, or *Old Parr*, a remarkable Englishman, who lived in the reigns of ten kings and queens. He was the son of John Parr, a husbandman of Winnington, in the parish of Alderbury, Salop. Following the profession of his father, he laboured hard, and lived on coarse fare. Being taken up to London by the E. of Arundel, the journey proved fatal to him. Owing to the alteration in his diet, to the change of the air, and his general mode of life, he lived but a very short time; though one Robert Samber says, in his work, entitled *Long Livers*, that Parr lived 16 years after his presentation to Charles II. He was buried in Westminster Abbey. After his death his body was opened; and an account was drawn up by the celebrated Dr HARVEY, of which the following is an extract: "He had a large breast, not fungous, but sticking to his ribs, and distended with blood; a lividness in his face, as he had a difficulty of breathing a little before his death, and a long lasting warmth in his armpits and breast after it; which sign, together with others, were so evident in his body as they use to be on those that die by suffocation. His heart was great, thick, fibrous, and fat; the blood in the heart blackish and diluted; the cartilages of the sternum not more bony than in others, but flexible and soft. His viscera were found and strong, especially the stomach; and he used to eat often by night and day, though contented with old cheese, milk, coarse bread, small beer, and wley; and, which is more remarkable, that he eat at midnight a little before he died. His kidneys were covered with fat, and pretty found;

only on the interior surface were found some aqueous or ferous abscesses, whereof one was near the bigness of a hen's egg, with a yellowish water in it, having made a roundish cavity, imprinted on that kidney; whence some thought it came that, a little before his death, a suppression of urine had befallen him; though others were of opinion, that his urine was suppressed upon the regurgitation of all the ferosity into his lungs. Not the least appearance there was of any stony matter, either in the kidneys or bladder. His bowels were also found, a little whitish without. His spleen very little, hardly equalling the bigness of one kidney. In short, all his inward parts appeared so healthy, that if he had not changed his diet and air, he might perhaps have lived a good while longer. The cause of his death was imputed chiefly to the change of food and air; so far much as coming out of a clear, thin, and free air, he came into the thick air of London; and, after a constant plain and homely country diet, he was taken into a splendid family, where he fed high, and drank plentifully of the best wines, whereupon the natural functions of the parts of his body were overcharged, his lungs obstructed, and the habit of the whole body quite disordered; upon which there could not but ensue a dissolution. His brain was found, entire, and firm; and though he had not the use of his eyes, nor much of his memory, several years before he died, yet he had his hearing and apprehension very well; and was able, even to the 130th year of his age, to do any husbandman's work, even threshing of corn." The following summary of his life is from Oldys's MS. notes on Fuller's Worthies: "Old Parr was born 1483; lived at home until 1500, æt. 17, when he went out to service. 1518, æt. 35, returned home from his master. 1522, æt. 39, spent four years on the remainder of his father's lease. 1543, æt. 60, ended the first lease he renewed of Mr Lewis Porter. 1563, æt. 80, married Jane, daughter of John Taylor, a maiden; by whom he had a son and a daughter, who both died very young. 1564, æt. 81, ended the second lease which he renewed of Mr John Porter. 1585, æt. 102, ended the third lease he had renewed of Mr Hugh Porter. 1588, æt. 105, did penance in Alderbury church for lying with Katharine Milton, and getting her with child. 1595, æt. 112, he buried his wife Jane, after they had lived 32 years together. 1605, æt. 122, having lived 10 years a widower, he married Jane, widow of Anthony Adda, daughter of John Loyd of Giffells, in Montgomeryshire, who survived him. 1635, æt. 152 and 9 months, he died; after they had lived together 30 years, and after 50 years possession of his last lease."

(I.) PARRA, in geography, a town of Persia, in Segesta, 60 miles N. of Zareng.

(II.) PARRA, in ornithology, a genus of birds belonging to the order of gallæ; the characters of which are: The bill is tapering and a little obtuse; the nostrils are oval, and situated in the middle of the bill; the forehead is covered with fleshy caruncles, which are lobated; the wings are small, and spinous. There are 5 species:

(1.) PARRA CHAVARIA is about the size of a dung-hill cock, and stands a foot and a half from the

the ground. The bill is of a dirty white colour; the upper mandible similar to that in a dung-hill cock; the nostrils are oblong, pervious: on both sides, at the base of the bill, is a red membrane, which extends to the temples. The irides are brown. On the hind head, are about 12 blackish feathers, 3 inches long, forming a crest, and hanging downwards. The rest of the neck is covered with a thick black down. The body is brown, and the wings and tail inclined to black. On the bend of the wings, are 2 or 3 spurs half an inch long. The belly is a light black. The thighs are half bare of feathers. The legs are very long, and of a yellow red colour. The toes are so long as to entangle one another in walking. "This species (says Mr Latham, in his Synopsi) inhabits the lakes, &c. near the river Cinu, about 30 leagues from Carthagena, in S. America, and feeds on vegetables. Its gait is solemn and slow; but it flies easily and swiftly. It cannot run, unless assisted by the wings at the same time. When any part of the skin is touched by the hand, a crackling is felt, though it is very downy beneath the feathers; and, indeed, this down adheres so closely as to enable the bird at times to swim. The voice is clear and loud, but far from agreeable. The natives, who keep poultry in great numbers, have one of these tame, which goes along with the flock about the neighbourhood to feed during the day, when this faithful shepherd defends them against birds of prey; being able, by means of the spurs on the wings, to drive off birds as big as the carrion vulture, and even that bird itself. It is so far of the greatest use, as it never deserts the charge committed to its care, bringing them all home safe at night. It is so tame as to suffer itself to be handled by a grown person, but will not permit children to attempt the same.—For the above account, we are indebted to Linnæus, who seems to be the only one who has given any account of this wonderful bird."

2. *PARRA DOMINICA*, is about the size of the lapwing. The bill is yellow, as are also the head and upper parts; the under are of a yellowish white bordering on rose colour. The legs are also yellow. This species inhabits several of the warmer parts of America and St Domingo.

3. *PARRA JACANA*, the *spur-winged water-hen*, is about the size of the water rail. The bill is in length about an inch and a quarter, of an orange colour; and on the forehead is a membranous flap, half an inch long and nearly as broad. On each side of the head also is another of the same, about a quarter of an inch broad, and both together they furround the base of the bill. The head, throat, neck, breast, and under parts, are black; and sometimes the belly is mixed with white, &c. This species inhabit Brazil, Guiana, and Surinam; but are equally common at St Domingo, where they frequent the marshy places, sides of ponds, and streams, and wade quite up to the thighs in the water. They are also generally seen in pairs, and when separated call each other continually till they join again. They are very shy, and most common in the rainy seasons in May and November. They are at all times very noisy; their cry sharp and shrill, and may be heard a great way off. This is called by the

French *chirurgien*. The flesh is accounted pretty good.

4. *PARRA SENEGALLA*, is about the same size with the *DOMINICA*, No 2. Its bill is also yellow tipped with black; the forehead is covered with a yellow skin; the chin and throat are black; the head and upper parts of the body and lesser wing covers the grey-brown. The lower part of the belly, and the upper and under tail-coverts are dirty white. At the bend of the wing, is a black spur. It inhabits Senegal, and thence derives its name. The negroes call them *Uatt Uatt*, the French the *squallers*, because, as we are told, as soon as they see a man they scream and fly off. They always fly in pairs.

5. *PARRA VARIABILIS*, the *four-winged water-hen*, is about 9 inches long. The bill is about 14 inches in length, and in colour orange-yellow. On the forehead is a flap of red skin; the crown of the head is brown, marked with spots of a darker colour; the hind part of the neck is much the same, but of a deeper dye. The sides of the head, throat, fore part of the neck, breast, belly, thighs, and under tail coverts are white, with a few red spots on the sides of the belly and base of the thighs. On the fore part of the wing is a yellow spur, &c. The legs are furnished with long toes, as in all the others, the colour of which is bluish ash. Mr Latham says, that one which came under his inspection from Cayenne was rather smaller. It had the upper parts much paler; over the eye was a streak of white passing no further, and unaccompanied by a black one. The hind part of the neck was dusky black. It had only the rudiment of a spur; and the red caruncle on the forehead was less, and laid back on the forehead. From these differences, this learned ornithologist conceives it to have differed either in sex or age from the other. This species inhabits Brazil, and is said to be pretty common about Carthagena and in South America.

PARRAMATTA, a town of New S. Wales, settled by British convicts, at the harbour of Port Jackson, 11 miles W. of Sydney Cove, between Rose-hill and the landing place. In 1791, about 1000 acres of the adjacent grounds were in cultivation; and the soil is good. Lon. 131. 39. E. Lat. 33. 50. S.

PARRECEY, a town of France, in the dep. of Jura; 4½ m. S. of Dole, and 4½ NNE. of Chauffin.

PARRELS, *n. s.* in a ship, are frames made of trunks, ribs, and ropes, which, having both their ends fastened to the yards, are so contrived as to go round about the mast, that the yards by their means may go up and down upon the mast. These also, with the *breastropes*, fasten the yards to the masts.

PARRET, or *PARRIB*, a river of Somersetshire, which rises in the S. part of that county, on the borders of Dorsetshire. Near Langport it is joined by the *Ordered*, augmented by the *Ivel*; and, about four miles from this junction, it is joined by the *Tone* or *Thone*, a pretty large river, rising among the hills in the western parts of this country. About two miles below the junction of the *Tone*, the *Parret* receives another considerable stream; and thus augmented, it passes by the town of Bridgewater, and falls into the Bristol channel in Bridgewater Bay.

E 2

(1.) PAR-

(1.) **PARRHASIUS**, a famous ancient painter of Ephesus, or, as some say, of Athens: he flourished about the time of Socrates, according to Xenophon. It is said, that he was excelled by Timanthes, but excelled Zeuxis. His subjects were very licentious.

(2.) **PARRHASIUS**, Janus, a famous grammarian in Italy, who was born at Cosenza, in Naples, in 1470. He was intended for the law, the profession of his ancestors; but he preferred classical learning. His real name was *John Paul Parisius*; but according to the humour of the grammarians of that age, he called himself *Janus Parrhasius*. He taught at Milan with much reputation, being admired for a graceful delivery, in which he chiefly excelled other professors.—He went to Rome when Alexander VI. was pope; but left it when in danger of being involved in the misfortunes of Cajetan and Savello, with whom he had some correspondence. Soon after, he was appointed professor of rhetoric at Milan; but presuming to censure the teachers there as *arrant blockheads*, they accused him of a criminal converse with his scholars, which obliged him to leave Milan. He went to Vicenza, where he obtained a larger salary; and he held this professorship till the Venetian states were laid waste by the troops of the League; upon which he returned to his native country. By the recommendation of John Lascaris, he was called to Rome by Leo X. who appointed him professor of polite literature. But, exhausted by his studies and labours, he became so afflicted with the gout, that he was obliged to return to Calabria, where he fell into a fever, and died. There are several books ascribed to him; particularly *Commentaries on Horace and Ovid*.

PARRHENIA. See ORATORY, § 233.

* **PARRICIDAL**, **PARRICIDIOUS**. *adj.* [from *parricida*, Lat.] Relating to parricide; committing parricide.—He is now paid in his own way, the *parricidius* animal, and the punishment of murderers is upon him. *Brown*.

(1.) * **PARRICIDE**. *n. f.* [*parricide*, French; *parricida*, Latin.] 1. One who destroys his father.—

I told him the revenging gods

² Gainst *parricides* did all their thunder bend. *Shak.*
2. One who destroys or invades any to whom he owes particular reverence, as his country or patron. 3. [*Parricide*, Fr. *parricidium*, Lat.] The murder of a father; murder of one to whom reverence is due.—Although he was a prince in military virtue approved, and likewise a good law-maker; yet his cruelties and *parricides* weighed down his virtues. *Bacon*.—

He will by *parricide* secure the throne. *Dryd.*

(2.) **PARRICIDE**, (§ 1. *Def.* 3.) is the murder of one's parents or children. By the Roman law, it was punished in a severer manner than any other kind of homicide. After being scourged, the delinquents were sewed up in a leathern sack, with a live dog, a cock, a viper, and an ape, and so cast into the sea. Solon, it is true, in his laws, made none against parricide; apprehending it impossible that one should be guilty of so unnatural a barbarity. And the Persians, according to Herodotus, entertained the same notion, when they adjudged all persons who killed their reputed parents to be

bastards. And upon some such reason as this must we account for the omission of an exemplary punishment for this crime in the English law, which treats it no otherwise than as simple murder, unless the child was also the servant of the parent. For, though the breach of natural relation is unobserved, yet the breach of civil or ecclesiastic connections, when coupled with murder, denominates it a new offence; no less than a species of treason, called, *parva proditio*, or *petit treason*: which, however, is nothing else but an aggravated degree of murder; although, on account of the violation of private allegiance, it is stigmatized as an inferior species of treason. And thus, in the ancient Gothic constitution, we find the breach, both of natural and civil relations, ranked in the same class with crimes against the state and sovereign.

PARRICIDIOUS. See **PARRICIDAL**.

PARROATH, a town of Ceylon, 50 miles WSW. of Trinkomally.

PARROCEL, the name of 3 eminent French painters. 1. Joseph was born at Brignoles, in 1648; studied at Paris, and in Italy under Bourguignon; became eminent for painting battles, though he had never seen an army; was elected a member of the academy of painting; and died at Paris in 1704. 2. Charles, his son and pupil, became also so eminent, that he was appointed to paint the conquests of Lewis XV. He died at Paris in 1732, aged 63. Peter, born at Avignon, nephew to Joseph, was also his pupil, and performed many capital works at St Germain, &c. His chief piece is at Versailles. He died in 1739, aged 75.

(1.) * **PARROT**. *n. f.* [*perroquet*, French.] A particoloured bird, of the species of the hooked bill, remarkable for the exact imitation of the human voice. See **PAROQUET**.—

Some will ever more peep through their eyes,
And laugh like parrots at a bag-piper. *Shak.*

Who taught the parrots human notes to try?
Dryden.

(2.) **PARROT**. See **PSITTACUS**.

PARR-TOWN, a town of Nova Scotia.

PARRY, Richard, D. D. a learned English divine, educated at Oxford, where he graduated in 1757. He was rector of Wichampton, and minister of Market Harborough, where he died in 1780. He wrote many useful religious treatises.

* *To* **PARRY**. *v. n.* [*parer*, French.] To put by thrusts; to fence.—A man of courage, who cannot fence, and will put all upon one thrust, and not stand *parrying*, has the odds against a moderate fencer. *Locke*.—

With learned skill, now push, now parry,
From Darii to Bocardo vary. *Prior.*

PARSBERG, a town of Bavaria, in Newburg; 9 miles NNE. of Dietfurt, and 18 NW. of Ratibon.

PARSCHINA, a town of China, in Tobolsk; 560 miles SE. of Turuchansk. Lon. 124. 40. E. Ferro. Lat. 60. 40. N.

PARSCHWITZ, a town of Silesia, in Leignitz; 9 miles SSE. of Luben, and 8 NE. of Leignitz.

* *To* **PARCE**. *v. a.* [from *paris*, Latin.] To resolve a sentence into the elements or parts of speech. It is a word only used in grammar schools.—Let him construe the letter into English, and
parfe

parse it over perfectly. *Afcham's Schoolmaster*.—Let scholars reduce the words to their original, to the first case of nouns, or first tense of verbs, and give an account of their formations and changes, their syntax and dependencies, which is called *parfing*. *Watts on the Mind*.

PARSHORE, a town of Worcestershire, 7 miles from Worcester, and 102 from London, on the N. side of the Avon, near its junction with the Bow, being a considerable thoroughfare in the lower road from Worcester to London. A religious house was founded here in 604, a small part of which now remains, and is used as the parish church of Holy Cross, the whole of which contained above 10 acres. The abbey church was 250 feet long, and 120 broad. The parish of Parshore is of great extent, and hath within its limits many manors and chapels. At present it has two parishes, Holy Cross and St Andrew. In Holy Cross church are several very antique monuments. Its chief manufacture is stockings. It contains about 300 houses, and has markets on Tuesday and Saturday; fairs Easter Tuesday, June 26th, and Tuesday before Nov. 1st.

* **PARSIMONIOUS**. *adj.* [from *parfimony*.] Covetous; frugal; sparing. It is sometimes of a good, sometimes of a bad sense.—A prodigal king is nearer a tyrant, than a *parfimonious*. *Bacon*.—A long *parfimonious* war will drain us of more men and money. *Addison*.—

Parfimonious age and rigid wisdom. *Rouve*.
* **PARSIMONIOUSLY**. *adv.* [from *parfimonious*.] Covetously; frugally; sparingly.—Our ancestors acted *parfimoniously*, because they only spent their own treasure for the good of their posterity. *Swift*.

* **PARSIMONIOUSNESS**. *n. f.* [from *Parfimonious*.] A disposition to spare and save.

* **PARSIMONY**. *n. f.* [*parfimonia*, Latin.] Frugality; covetousness; niggardliness; saving temper.—The ways to enrich are many: *parfimony* is one of the best, and yet is not innocent. *Bacon*.—These people, by their extreme *parfimony*, soon grow into wealth from the smallest beginnings. *Swift*.

PARSING. *n. f.* See **TO PARSE**.

(1.) * **PARSLEY**. *n. f.* [*persil*, Fr. *apium*, Lat. *persil*, Welsh.] An herb.—A wench married in the afternoon, as she went to the garden for *parsley* to stuff a rabbit. *Shak*.

Green beds of *parsley* near the river grow.

Dryden.
—Sempronius dug Titus out of the *parsley*-bed, as they used to tell children, and thereby became his mother. *Locke*.

(2.) **PARSLEY**, in botany. See **AFIUM**.

(3.) **PARSLEY, BASTARD**. See **CAUCALIS**.

(4.) **PARSLEY, BASTARD STONE**. See **SISON**.

(5.) **PARSLEY, CORN**. See **SISON**, N° 3.

(6.) **PARSLEY, FOOL'S**. See **ÆTHUSA**.

(7.) **PARSLEY, MACEDONIAN**. See **BUBON**.

(8.) **PARSLEY, MILK**. See **SELINUM**.

(9.) **PARSLEY, MOUNTAIN**. See **ATHAMAN-TA**.

(10.) **PARSLEY PIERT**. See **APHANES**.

(1.) * **PARSNEP**. *n. f.* [*pastinaca*, Latin.] A plant.—November is drawn in a garment of

changeable green, and bunches of *parsneps* and turnips in his right hand. *Peacham on Blazoning*.

(2.) **PARSNEP**, in botany. See **PASTINACA**.

(3.) **PARSNEP, COW'S**. See **HERACLEUM**.

(4.) **PARSNEP, PRICKLY**. See **ECHINOPHORA**.

(5.) **PARSNEP, WATER**. See **Sium**.

(1.) * **PARSON**. *n. f.* [Derived either from *persona*, because the *parson* omnium *personam* in ecclesia sustinet; or from *parochianus*, the parish priest.] 1. The priest of a parish; one that has a parochial charge or cure of souls.—Abbot was preferred by king James to the bishoprick of Coventry and Litchfield, before he had been *parson*, vicar, or curate of any parish church. *Clarendon*.
2. A clergyman.—

Sometimes comes she with a tithe-pig's tail,
Ticking the *parson* as he lies asleep. *Shak*.

3. It is applied to the teachers of the presbyterians.

(2.) A **PARSON** is one that hath full possession of all the rights of a parochial church. He is called *parson*, *persona*, because by his person the church is represented; and he is in himself a body corporate, to protect and defend the rights of the church (which he personates) by a perpetual succession. He is sometimes called the *rector* or *governor* of the church; but the appellation of *parson* is the most legal and most honourable title that a parish priest can enjoy; because such a one, (Sir Edward Coke observes), and he only, is said *vicem seu personam ecclesie gerere*. A *parson* has, during his life, the freehold in himself of the parsonage house, the glebe, the tithes, and other dues. But these are sometimes *appropriated*; that is, the benefice is perpetually annexed to some spiritual corporation, either sole or aggregate, being the patron of the living; whom the law esteems equally capable of providing for the service of the church as any single private clergyman. (See **APPROPRIATION**, § 2.) The appropriating corporations, or religious houses, were wont to depute one of their own body to perform divine service, and administer the sacraments in those parishes of which the society was thus the *parson*. This officiating minister was in reality no more than a curate, deputy, or vicergerent of the appropriator, and therefore called *vicarius*, *VICAR*. His stipend was at the discretion of the appropriator, who was, however, bound of common right to find somebody, *qui illi de temporalibus, episcopo de spiritualibus, debeat respondere*. But this was done in so scandalous a manner, and the parishes suffered so much by the neglect of the appropriators, that the legislature was forced to interpose: and accordingly it is enacted, by stat. 13 Ric. II. c. 6. that in all appropriations of churches the diocesan bishop shall ordain (in proportion to the value of the church) a competent sum to be distributed among the poor parishioners annually; and that the vicarage shall be sufficiently endowed. The parish frequently suffered, not only by the want of divine service, but also by withholding those alms for which, among other purposes, the payment of tithes was originally imposed: and therefore in this act a pension is directed to be distributed among the poor parochians,

chians, as well as a sufficient stipend to the vicar. But he, being liable to be removed at the pleasure of the appropriator, was not likely to insist too rigidly on the legal sufficiency of the stipend; and therefore, by stat. 4. Hen. IV. c. 12. it is ordained, that the vicar shall be a secular person, not a member of any religious house; that he shall be vicar perpetual, not removable at the caprice of the monastery; and that he should be canonically instituted and inducted, and be sufficiently endowed, at the discretion of the ordinary, for these three express purposes, to do divine service, to inform the people, and to keep hospitality. The endowments, in consequence of these statutes, have usually been by a portion of the glebe or land belonging to the parsonage, and a particular share of the tithes, which the appropriators found it most troublesome to collect, and which are therefore generally called *petty or small tithes*; the greater, or *parcial* tithes, being still reserved to their own use. But one and the same rule was not observed in the endowment of all vicarages. Hence some are more liberally, and some more scantily, endowed; and hence the tithes of many things, as wood in particular, are in some parishes rectorial, and in some vicarial tithes. The distinction, therefore, of a parson and vicar, is this: The parson has for the most part the whole right to all the ecclesiastical dues in his parish; but a vicar has generally an appropriator over him, entitled to the best part of the profits, to whom he is in effect perpetual curate, with a standing salary. Though in some places the vicarage has been considerably augmented by a large share of the great tithes; which augmentations were greatly assisted by stat. 27 Car. II. c. 8. enacted in favour of poor vicars and curates, which rendered such temporary augmentations (when made by the appropriators) perpetual. The method of becoming a parson or vicar is much the same. To both there are 4 requisites necessary; holy orders, presentation, institution, and induction. By common law, a deacon, of any age, might be instituted and inducted to a parsonage or vicarage; but it was ordained, by stat. 13. Eliz. c. 12. that no person under 23 years of age, and in deacon's orders, should be presented to any benefice with cure; and if he were not ordained priest within one year after his induction, he should be *ipso facto* deprived: and now, by stat. 13 and 14 Car. II. c. 4. no person is capable to be admitted to any benefice, unless he hath been first ordained a priest; and then he is, in the language of the law, a clerk in orders. But if he obtain orders, or a licence to preach, by money or corrupt practices, (which seem to be the true, though not the common, notion of *simony*), the person giving such orders forfeits 40l. and the person receiving, 10l. and is incapable of any ecclesiastical preferment for 7 years after. Any clerk may be presented to a parsonage or vicarage; that is, the patron, to whom the advowson of the church belongs, may offer his clerk to the bishop of the diocese to be instituted. But when he is presented, the bishop may refuse him upon many accounts. As, 1. If the patron is excommunicated, and remains in contempt 40 days; or, 2. If the clerk be unfit: which unfitness is of several kinds.

First, with regard to his person; as if he be a bastard, an outlaw, an excommunicate, an alien, under age, or the like. Next, with regard to his faith or morals; as for any particular heresy, or vice that is *malum in se*; but if the bishop alleges only in generals, as that he is *schismaticus intractatus*, or objects a fault that is *malum prohibitum* merely, as haunting taverns, playing at unlawful games, or the like, it is not good cause of refusal. Or, lastly, the clerk may be unfit to discharge the pastoral office for want of learning. In any of which cases, the bishop may refuse the clerk. In case the refusal is for heresy, schism, inability of learning, or other matter of ecclesiastical cognizance, there the bishop must give notice to the patron of such his cause of refusal, who being usually a layman, is not supposed to have knowledge of it; else he cannot present by lapie; but if the cause be temporal, there he is not bound to give notice. If an action at law be brought by the patron against the bishop for refusing his clerk, the bishop must assign the cause. If the cause be of a temporal nature, and the fact admitted, (for instance, outlawry), the judges of the king's courts must determine its validity, or whether it be sufficient cause of refusal: but if the fact be denied, it must be determined by a jury. If the cause be of a spiritual nature, (as heresy, particularly alleged) the fact, if denied, shall also be determined by a jury: and if the fact be admitted or found, the court, upon consultation and advice of learned divines, shall decide its sufficiency. If the cause be want of learning, the bishop need not specify in what points the clerk is deficient, but only allege that he is deficient; for stat. 9. Edw. II. f. 1. c. 13. is express, that the examination of the fitness of a person presented to a benefice belongs to the ecclesiastical judge. But because it would be nugatory in this case to demand the reason of refusal from the ordinary, if the patron were bound to abide by his determination, who has already pronounced his clerk unfit; therefore, if the bishop returns the clerk to be *minus sufficiens in literatura*, the court shall write to the metropolitan to re-examine him, and certify his qualifications; which certificate of the archbishop is final. If the bishop hath no objections, but admits the patron's presentation, the clerk so admitted is next to be instituted by him; which is a kind of investiture of the spiritual part of the benefice; for by institution, the care of the souls of the parish is committed to the charge of the clerk. When a vicar is instituted, he (besides the usual forms) takes, if required by the bishop, an oath of perpetual residence; for the maxim of law is, that *vicarius non habet vicarium*; and as the non-residence of the appropriators was the cause of the perpetual establishment of vicarages, the law judges it very improper for them to defeat the end of their constitution, and by absence to create the very mischief which they were appointed to remedy; especially as, if any profits are to arise from putting in a curate and living at a distance from the parish, the appropriator, who is the real parson, has undoubtedly the elder title to them. When the ordinary is also the patron, and confers the living, the presentation and institution are one and the same act, and are called a

collatio

collation to a benefice. By institution or collation the church is full, so that there can be no fresh presentation till another vacancy, at least in the case of a common patron; but the church is not full against the king till induction; nay, even if a clerk is instituted upon the king's presentation, the crown may revoke it before induction, and present another clerk. Upon institution also, the clerk may enter on the parsonage house and glebe, and take the tithes; but he cannot grant or let them, or bring an action for them, till induction. See *INDUCTION*, § 3. For the rights of a parson or vicar, in his tithes and ecclesiastical dues, see *TITHES*. As to his duties, they are so numerous, that it is impracticable to recite them here with any tolerable conciseness or accuracy; but the reader who has occasion may consult *B. Gibson's Codex*, *John'son's Clergyman's Vade Mecum*, and *Burn's Ecclesiastical Law*. We shall therefore only just mention the article of residence, upon the supposition of which the law doth style every parochial minister *an incumbent*. By stat. 21 Henry VIII. c. 13, persons willingly absenting themselves from their benefices, for one month together, or two months in the year, incur a penalty of s^l. to the king, and s^l. to any person that will sue for the same; except chaplains to the king, or others therein mentioned, during their attendance in the household of such as retain them; and also except all heads of houses, magistrates, and professors in universities, and all students under 40 years of age residing there, *bona fide*, for study. Legal residence is not only in the parish, but also in the parsonage house; for it hath been resolved, that the statute intended residence, not only for serving the cure and for hospitality, but also for maintaining the house, that the successor also may keep hospitality there. There is but one way whereby one may become a parson or vicar; but there are many by which one may cease to be so. 1. By death. 2. By cession, in taking another benefice; for by stat. 21 Hen. VIII. c. 13, if any one having a benefice of 8^l. *per annum*, or upwards, in the king's books (according to the present valuation), accepts any other, the first shall be adjudged void, unless he obtains a dispensation; which no one is entitled to have but the chaplains of the king and others therein mentioned, the brethren and sons of lords and knights, and doctors and bachelors of divinity and law, admitted by the universities of this realm. And a vacancy thus made for want of a dispensation, is called *cession*. 3. By consecration; for, when a clerk is promoted to a bishopric, all his other preferments are void the instant that he is consecrated. But there is a method, by the favour of the crown, of holding such livings in *commendam*. *Commenda*, or *ecclesia commendata*, is a living commended by the crown to the care of a clerk, to hold till a proper pastor is provided for it. This may be temporary for one, two, or three years, or perpetual, being a kind of dispensation, to avoid the vacancy of the living, and is called a *commendam retinere*. There is also a *commendam recipere*, which is to take a benefice *de novo* in the bishop's own gift, or the gift of some other patron consenting to the same; and this is the same to him as institution and induction are to another

clerk. 4. By resignation. But this is of no avail till accepted by the ordinary, into whose hands the resignation must be made. 5. By deprivation, either by canonical censures, or in pursuance of divers penal statutes, which declare the benefice void, for some nonfeasance or neglect, or else some malfeasance or crime; as for simony; for maintaining any doctrine in derogation of the king's supremacy, or of the 39 articles, or of the book of common prayer; for neglecting, after institution, to read the liturgy and articles in the church, or make the declarations against Popery, or take the abjuration oath; for using any other form of prayer than the liturgy of the church of England; or for absenting himself 60 days in one year from a benefice belonging to a Popish patron, to which the clerk was presented by either of the universities: in all which, and similar cases, the benefice is *ipso facto* void, without any formal sentence of deprivation.

(1.) * *PARSONAGE*. *n. f.* [from *parson*.] The benefice of a parish.—I have given him the *parsonage* of the parish. *Addition*.

(2.) A *PARSONAGE* is a rectory, or parish church, endowed with a glebe, house, lands, tithes, &c. for the maintenance of a minister, with cure of souls within such parish. See *PARSON*, § 2.

(1.) *PARSONS*, James, M. D. and F. R. S. a late eminent and learned physician, born at Barnstaple, Devonshire, in 1705. He was the 9th son of Col. Parsons, and was educated at Dublin, whence he went to Paris, and improved himself under Astruc, Lemery, Hunaud, Le Cat, Bouldue, and Jussieu. He graduated at Rheims, in 1736; came to London, and was made F. R. S. in 1740. He was also a member of the Antiquarian, Medical, and Agricultural Societies. In 1753, he was admitted a licentiate of the College of Physicians, and appointed physician to St Giles's infirmary. He also assisted Dr James Douglas in anatomy. He died in 1770. He was much esteemed by the literati at home, and had an extensive correspondence with those abroad. His publications are numerous and valuable. Of these we shall only mention his "*Remains of Japhet; being Historical Enquiries into the affinity and origin of the European Languages*." Its object is to prove the antiquity of the first inhabitants of these islands, as descended from Gomer and Magog, above 1000 years before Christ, and the affinity of their languages with some others.

(2.) *PARSONS*, Robert, an eminent writer of the church of Rome, born at Nether Stowey, near Bridgewater, in 1546, and educated at Balliol college, Oxford, where he distinguished himself as a zealous Protestant and an acute disputant; but being charged by the society with incontinency and embezzling the college money, he went to Flanders, and declared himself a Catholic. After travelling to several other places, he effected the establishment of the English seminary at Rome, and procured father Allen to be chosen rector of it. He himself was appointed the head of the mission to England, to dethrone Q. Elizabeth, and extirpate the Protestant religion. He accordingly came over in 1580, and took some bold steps for that purpose, in which he concealed

sealed himself with great art, travelling about the country to gentlemen's houses, disguised in the habit, sometimes of a foldier, sometimes of a gentleman, and at other times like a minister or an apparitor; but father Campian being seized and committed to prison, our author eloped, and went to Rome, where he was made rector of the English seminary. He had long entertained the most sanguine hopes of converting to the Popish faith the young king of Scots, which he considered as the most effectual means of bringing over his subjects to the same religious principles; but finding this impossible, he published in 1594 his celebrated book, under the name of *Doleman*, to overthrow James's title to the crown of England. He died at Rome in 1610, and was buried in the chapel of the English college. He also wrote, 1. A Defence of the Catholic Hierarchy. 2. The Liturgy of the Sacrament of the Mass. 3. A Memorial for the Reformation; and several other tracts.

PARSONSFIELD, a town of the United States, in Maine, York county, on the New Hampshire line, 118 miles N. of Boston. It had 655 citizens in 1795.

PARSONS-TOWN, a town of N. Carolina, 30 miles NE. of Salisbury.

(1.) * **PART**. *n. f.* [*pars*, Lat.] 1. Something less than the whole; a portion; a quantity taken from a larger quantity.—

Helen's cheeks, but not her heart,
Atalanta's better *part*. *Shak.*
—The people stood at the nether *part* of the mount. *Exodus*.—This law wanted not *parts* of prudent and deep foresight. *Bacon*.—The citizens were for the most *part* slain or taken. *Knolles*.—

Henry had divided

The person of himself into four *parts*. *Daniel*.
—These conclude that to happen often, which happeneth but sometimes; that never, which happeneth but seldom; and that always, which happeneth for the most *part*. *Brown*.—He had very great *parts* of breeding, being a very great scholar in the political *parts* of learning. *Clarendon*.—When your judgment shall grow stronger, it will be necessary to examine, *part* by *part*, those works which have given reputation to the masters. *Dryden*.—

Of heavenly *part*, and *part* of earthly blood;
A mortal woman mixing with a god. *Dryden*.
—Our ideas of extension and number, do they not contain a secret relation of the *parts*? *Locke*.
2. Member.—He fully possessed the revelation he had received from God; all the *parts* were formed, in his mind, into one harmonious body. *Locke*.
3. Particular; distinct species.—Eusebia brings them up to all kinds of labour that are proper for women, as sewing, knitting, spinning, and all other *parts* of housewifery. *Law*.
4. Ingredient in a mingled mass.—Many irregular and degenerate *parts*, by the defective economy of nature, continue complicated with the blood. *Blackmore*.
5. That which, in division, falls to each.—

Go not without thy wife, but let me bear
My *part* of danger. *Dryden*.

Had I been won, I had deserv'd your blame;
But sure my *part* was nothing but the shame. *Dryden*.

6. Proportional quantity.—

'Twas before allaid

With twenty *parts* in water. *Chapman*.
7. Share; concern.—Forasmuch as the children are partakers of flesh and blood, he also took *part* of the same. *Hebrews* ii. 14.—Sheba said, we have no *part* in David. 2 *Sam.* xx. 1.—The ungodly made a covenant with death, because they are worthy to take *part* with it. *Wisdom* i. 16.—Agamemnon provokes Apollo, whom he was willing to appease afterwards at the cost of Achilles, who had no *part* in his fault. *Pope*. 8. Side; party; interest; faction: to take *part*, is to act in favour of another.—

Michael Caffio,

When I have spoken of you dispraisingly,
Hath ta'en your *part*. *Shak.*
He strengths his own, and who his *part* did take. *Daniel*.

Destiny may take thy *part*,
And may thy fears fulfil. *Donne*.

Some other pow'r

Might have aspir'd, and me, though mean,
Drawn to his *part*. *Milton*.
—Natural ambition might take *part* with reason and their interest to encourage imitation. *Glanville*.—

And make whole kingdoms take her brother's *part*. *Waller*.

The arn thus waits upon the heart,

So quick to take the bully's *part*;
That one, though warm, decides more flow;
That t'other executes the blow. *Prior*.

9. Something relating or belonging.—For Zelmanc's *part*, she would have been glad of the fall, which made her bear the sweet burden of Philoclea, but that she feared she might receive some hurt. *Sidney*.—For my *part*, I would entertain the legend of my love with quiet hours. *Shak*.—

For your *part*, it not appears to me,

That you should have an inch of any ground
To build a grief upon. *Shak*.

—For my *part*, I have no servile end in my labour. *Wolton*.—For my *part*, I think there is nothing so secret that shall not be brought to light. *Burnet*.

10. Particular office or character.—The pneumatical *part*, which is in all tangible bodies, and hath some affinity with the air, performeth the *parts* of the air. *Bacon*.—Where the people did their *part*, such increase of maize. *Heylyn*.—

Accuse not nature, she hath done her *part*;
Do thou but thine. *Milton*.

11. Character appropriated in a play.—

That *part*

Was aptly fitted, and naturally performed. *Shak*.
—Have you the lion's *part* written? Give it me, for I am slow of study. *Shak*.—We must not chuse which *part* we shall act; it concerns us only to be careful that we do it well. *Taylor*.
12. Business; duty.—Let them be so furnished and instructed for the military *part*, as they may defend themselves. *Bacon*.
13. Action; conduct.—This

This *part* of his

Conjoins with my diseafe.

Shak.

14. Relation reciprocal.—Inquire not whether the sacraments confer grace by their own excellency, because they, who affirm they do, require so much duty on our *parts*, as they also do, who attribute the effect to our moral disposition. *Taylor*.—The scripture tells us the terms of this covenant, of God's *part* and our's, namely, that he will be our God, and we shall be his people. *Tillotson*.—

It might be deem'd, on our historian's *parts*,

Or too much negligence, or want of art,

If he forgot the vast magnificence

Of royal Theus.

Dryden.

15. In good *part*; in ill *part*: as well done; as ill done.—God accepteth it in good *part*, at the hands of faithful men. *Hooker*. 16. [In the plural.] Qualities; powers; faculties, or accomplishments.—Who is courteous, noble, liberal, but he that hath the example before his eyes of Amphialus? where are all heroidal *parts*, but in Amphialus? *Sidney*.—Such licentious *parts* tend, for the most *part*, to the hurt of the English. *Spenser*.—

I conjure thee, by all the *parts* of man,

Which honour does acknowledge.

Shak.

—Solomon was a prince adorned with such *parts* of mind, and exalted by such a concurrence of all prosperous events to make him magnificent.

South.—The Indian princes discover fine *parts* and excellent endowments, without improvement, *Felton*.—Any employment of our talents, whether of our *parts*, our time or money, that is not strictly according to the will of God, are as great absurdities and failings. *Law*. 17. [In the plural.] Quarters; regions; districts.—No man was, in our *parts*, spoken of, but he, for his manhood. *Sidney*.—When he had gone over those *parts*, he came into Greece. *Acts* xx. 2.—

All *parts* resound with tumults, plaints, and fears;

And grisly death, in sundry shapes, appears.

Dryden.

18. For the most *part*. Commonly; oftener than otherwise.—Of a plain and honest nature, for the most *part*, they were found to be. *Heylyn*.—

(2.) * *PART. adv.* Partly; in some measure.—

For the fair kindness you have shewed me, And *part* being prompted, by your present trouble,

I'll lend you something.

Shak.

(3.) *PART, ALIQUANT*, is a quantity which, being repeated any number of times, becomes always either greater or less than the whole. Thus 5 is an aliquant part of 17, and 9 an aliquant part of 16, &c. The aliquant part is resolvable into aliquot parts. Thus 15, an aliquant part of 20, is resolvable into 10's, and 5 a fourth part of the same.

(4.) *PART, ALIQUOT*, is a quantity which, being repeated any number of times, becomes equal to an integer. Thus 6 is an aliquot part of 24, and 5 an aliquot part of 30, &c.

(5.) *PART, LOGICAL*, is a division for which we are indebted to the schoolmen. It refers to some universal as its whole; in which sense the species are parts of a genus, and individuals are parts of the species.

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(6.) *PART, PHYSICAL*, is that which, though it enter the composition of a whole, may yet be considered apart, and under its own distinct idea; in which sense, a continuum is said to consist of parts. Physical parts, again, are of two kinds, homogeneous and heterogeneous; the first are those of the same denomination with some other; the second of a different one. (See *HOMOGENEOUS*, &c.) Parts, again, are distinguished into subjective, essential, and integrant. The schoolmen were also the authors of this division.

(7.) *PARTS OF SPEECH*, in grammar, are all the sorts of words which can enter the composition of a discourse. See *GRAMMAR*, under *ENGLISH LANGUAGE*. Mr Horne Tooke's attempt to reduce the number of the Parts of Speech to three, *Nouns, Verbs, and Adverbs*, is no real improvement in Grammar.

(1.) * *To PART. v. a.* 1. To divide; to share; to distribute.—All that believed, sold their goods, and parted them to all men. *Acts* ii. 45.—

Jove himself no less content wou'd be

To *part* his throne, and share his heav'n with thee.

Pope.

2. To separate; to disunite.—Nought but death shall *part* thee and me. *Ruth* i. 17.—

All the world,

As 'twere the bus'ness of mankind to *part* us,

Is arm'd against my love.

Dryden.

3. To break into pieces.—*Part* it in pieces, and pour oil thereon. *Leviticus*, ii. 6. 4. To keep asunder.—

In the narrow seas that *part*

The French and English, there miscarried

A vessel of our country.

Shak.

5. To separate combatants.—

King John did fly, an hour or two before

The stumbling night did *part* our weary powers.

Shak.

Jove did both hosts survey,

And, when he pleas'd to thunder, *part* the fray.

Waller.

6. To seern.—

The liver minds his own affair,

And *parts* and strains the vital juices.

Prior.

(2.) * *To PART. v. n.* 1. To be separated.—

Powerful hands will not *part*

Easily from possession won with arms.

Milton.

'Twas for him much easier to subdue

Those foes he fought with, than to *part* from you.

Dryden.

2. To quit each other.—

He wrung Bassanio's hand, and so they parted.

Shak.

—This was the design of a people, that were at liberty to *part* asunder, but desired to keep in one body. *Locke*.—

What! *part*, for ever *part*? unkind Ismena!

Smith.

—If it pleases God to restore me to my health. I shall make a third journey; if not, we must *part*, as all human creatures have parted. *Swift*. 3. To take farewell.—

Ere I could

Give him that *parting* kiss, which I had set
Betwixt two charming words, comes in my fa-

ther.

Shak.

Nuptial

Nuptial bow'r! by me adorn'd, from thee
How shall I *part*, and whither wander? *Milton*.
—They *parted* from him with tears in their eyes.
Swift. 6. To have share.—As his *part* is that
goeth down to the battle, so shall his *part* be that
tarrich by the stuff; they shall *part* alike. *Isa*.
5. [*Partir*, Fr.] To go away; to set out.—

So *parted* they; the angel up to heaven
From the thick shade, and Adam to his bow'r.
Milton.

Thy father
Embrace'd me, *parting* for th' Etrurian land.
Dryden.

6. To *PART* with. To quit; to resign; to lose;
to be separated from.—

For her sake, I do rear up her boy;
And for her sake, I will not *part* with him.
Shak.

—An affectionate wife, when in fear of *parting*
with her beloved husband, heartily desired of
God his life or society. *Taylor*.

Celia, for thy sake, I *part*
With all that grew so near my heart. *Waller*.

Thou marble hew'd ere long to *part* with
breath,

And houses rear'd, unmindful of thy death.
Sandys.

—Lixivate salts, though, by piercing the bodies
of vegetables, they dispose them to *part* readily
with their tincture, yet some tinctures they do
not only draw out, but likewise alter. *Boyle*.—
The ideas of hunger and warmth are some of the
first that children have, and which they scarce
ever *part* with. *Locke*.—What a despicable figure
must mock patriots make, who venture to be
hanged for the ruin of those civil rights, which
their ancestors rather than *part* with, chose to be
cut to pieces in the field of battle? *Addison*.—
The good things of this world so delight in, as
remember, that we are to *part* with them. *Atter-*
bury.—As for riches and power, our Saviour
plainly determines, that the best way to make
them blessings is to *part* with them. *Swift*.

* *PARTABLE*. *adj.* [from *part*.] Divisible;
such as may be parted.—His hot love was *partable*
among three other of his mistresses. *Camden's Re-*
mains.

* *PARTAGE*. *n. f.* [*partage*, Fr.] Division;
act of sharing or parting. A word merely French.
—This *partage* of things, in an equality of pri-
vate possessions, men have made practicable out
of the bounds of society without compact, only
by putting a value on gold and silver. *Locke*.

(1.) * To *PARTAKE*. *v. n.* Preterite, I *partook*;
participle passive, *partaken*. [*part* and *take*.] 1.
To have share of any thing; to take share with:
it is commonly used with *of* before the thing
shared. *Locke* uses it with *in*.—

Partake and use my kingdom as your own.
Dryden.

—How far brutes *partake* in this faculty, is not
easy to determine. *Locke*.—Truth and falsehood
have no other trial but reason and proof, which
they made use of to make themselves knowing,
and so must others too that will *partake* in their
knowledge. *Locke*. 2. To participate; to have
something of the property, nature, claim, or

right.—The attorney of the duchy of Lancaster
partakes partly of a judge, and partly of an attor-
ney-general. *Bacon*. 3. To be admitted to: not
to be excluded.—

You may *partake* of any thing we say;

We speak no treason. *Shak*.

4. To combine; to unite in some bad design. A
juridical sense.—As it prevents factions and *par-*
takings, so it keeps the rule and administration of
the laws uniform. *Hale*.

(1.) * To *PARTAKE*. *v. a.* 1. To share; to
have part in.—

By and by, thy bosom shall *partake*

The secrets of my heart. *Shak*.

Let her with thee *partake*, what thou hast
heard. *Milton*.

Let ev'ry one *partake* the general joy.

Dryden.
2. To admit to part; to extend participation to.
Obsolete.—

My friend, bight Philemon, I did *partake*

Of all my love, and all my privacy. *Spenser*.

Your exultation *partake* to every one. *Shaks*.

* *PARTAKER*. *n. f.* [from *partake*.] 1. A
partner in possessions; a sharer of any thing; an as-
sociate with: commonly with *of* before the thing
partaken.—They whom earnest lets hinder from
being *partakers* of the whole, have yet, through
length of divine service opportunity for access un-
to some reasonable part thereof. *Hooker*.

Didst thou

Make us *partakers* of a little gain,

That now our loss might be ten times as much?
Shak.

With such she must return at setting light,

Tho' not *partaker*, witness of their night.
Prior.

—His bitterest enemies were *partakers* of his kind-
ness. *Calamy*. 2. Sometimes with *in* before the
thing partaken: perhaps of is best before a thing,
and *in* before an action.—

With me *partaker* in thy happiness,

When thou do'st meet good hap. *Shak*.

—We would not have been *partakers* with them
in the blood of the prophets. *Mat. xxiii. 30*. 3.
Accomplice; associate.—Thou consentedst, and
hast been *partaker* with adulterers. *Psal. l. 10*.—
He drew with him complices and *partakers*. *Ba-*
con.

PARTEEN, a town of Ireland, in Clare, Mun-
ster, pleasantly seated on the Shannon.

PARTENAY. See *PARTHENAY*, N° 4.

PARTENI, a river of Asiatic Turkey, which
runs into the Black Sea, near Amasieh, in Natio-
na.

PARTENKERCH, or } a town of Bavaria, in
PARTENKIRK, } Freyding, 6 miles S. of
Weilheim, and 40 SW. of Munich. *Lon. 11. c.*
E. Lat 47. 36. N.

* *PARTER*. *n. f.* [from *part*.] One that *parts*
or separates.—The *partier* of the fray was night,
which, with her black arms, pulled their malicious
sights one from the other. *Sidney*.

(1.) * *PARTERRE*. *n. f.* [*parterre*, Fr.] A
level division of ground, that, for the most part,
faces the south and best front of an house, and is
furnished with greens and flowers. *Miller*.—There
are

are as many kinds of gardening, as of poetry; your makers of *parterres* and flower gardens are epigrammatists and sonneteers. *Spectator*.—

The vast *parterres* a thousand hands shall make. *Pope*.

(2.) **PARTERRES**, in gardening, are of two kinds; the *plain*, and *parterres of embroidery*. Plain *parterres* are most valuable in England, because of the firmness of the English grass turf, which is superior to that of any other part of the world: and the *parterres of embroidery* are cut into shell and scroll work, with alleys between them. An oblong, or long square is accounted the most proper figure for a *parterre*; and a *parterre* should indeed be always twice as long as it is broad, because according to the laws of perspective, a long square always sinks to a square; and an exact square always appears less than it really is. As to the breadth of a *parterre*, it is to be proportionable to the front of the house; but less than 100 feet in breadth is too little. There should be on each side the *parterre*, a terrace walk raised for a view, and the flat of the *parterre* between the terraces should never be more than 300 feet at the utmost in breadth; and about 140 feet in width, with twice and a half that in length, is esteemed a very good size and proportion.

PARTHA, or **BARDA**, a river of Upper Saxony, which rises 4 miles S. of Grimma, and runs into the Plesse, near Leipzig.

PARTHAMASIRIS, a king of Armenia and Parthia, who was taken prisoner by Trajan. See **PARTHIA**, § 9.

PARTHANASPATES, a king of Parthia, crowned by Trajan. See **PARTHIA**, § 10.

PARTHAON, in fabulous history, the son of Neptune, or of Agenor and Epicaeste; and father of OENEUS, STEROPS, &c. by his wife Euryte.

(1.) **PARTHENAY**, John DE, lord of Soubise, an eminent French commander, born in 1512. He commanded the troops in Italy in 1550; and supported the protestant cause till his death, in 1566. He left one daughter. See N° 3.

(2.) **PARTHENAY**, Anne DE, a lady of great genius and learning, and a proficient in Latin and Greek. She married Anthony De Pons, count of Marennas, and was one of the brightest ornaments of the court of Ferrara. She was a Calvinist.

(3.) **PARTHENAY**, Catharine DE, niece to the preceding, and lady of Soubise; was married in 1568, to the Baron De Pons, and in 1575 to René Vise. Rohan; by whom she had the famous D. of Rohan, who so bravely defended the Protestant cause during the civil wars under Lewis XIII. She published poems, comedies, and tragedies. Her daughter Catharine was eminent for virtue, and married the D. of Deux Ponts. She died in 1607; and her mother in 1631.

(4.) **PARTHENAY**, in geography, a town of France, in the dep. of the Two Sevres, and late prov. of Poitou. It has a great trade in corn and cattle, and contains about 3,500 citizens. In Aug. 1793, the republicans were defeated by the royalists near it. It is seated on the Thoue, 17 miles S. of Thouars, 21 NNE. of Niort, and 24 W. of Poitiers. Lon. o. 19. W. Lat. 47. 36. N.

PARTHENIAS, a river of Greece, in Peloponnesus, which runs past Elis. *Pausan.* vi. c. 21.

PARTHENII, citizens of ancient Sparta, who owed their existence to a singular circumstance. During the Messenian war, the Spartans had been ten years absent from their city; and "they had bound themselves by a solemn oath not to return till they had subdued Messenia. The magistrates as well as the women of Sparta were alarmed at the danger of such long absence depopulating the country. A law was therefore enacted, that all the young men, who had not taken the oath, should have free access to the unmarried women. The fruits of this promiscuous intercourse were named *Παρθέναι*, *Parthenii*, i. e. *Sons of Virgins*. When they grew up, knowing they had no legitimate fathers, and of course, no inheritance, they conspired with the Helots, to massacre the other citizens, and seize their possessions. The conspiracy was discovered, but the Spartans, instead of punishing them, permitted them to emigrate to Italy, where under their leader PHALANTUS, they settled in Magna Græcia, and built TARENTUM; A. A. C. 707. *Justin.* iii. 5. *Strabo*, 6. *Paus. Plat.*

PARTHENION, a mountain of Peloponnesus, N. of Tegea. *Pausan.*

PARTHENIUM, in botany, **BASTARD FEWERFEW**, or **KIU-HOA** of the Chinese, a genus of the pentandria order, belonging to the monœcia class of plants; and in the natural method ranking under the 49th order, *Compositæ*. The male calyx is common and pentaphyllous; the florets of the disk monopetalous: the female has 5 florets of the radius, each with two male florets behind it: the intermediate female superior; the seed is naked. It has been much neglected in Europe, having on account of its smell been banished from our *parterres*. It is therefore indebted for its culture to the distinguished rank it holds among the Chinese flowers. The skill of the florists, and their continual care, have brought this plant to so great perfection, that Europeans scarcely know it. The elegance and lightness of its branches, the beautiful indentation of its leaves, the splendour and duration of its flowers, seem indeed to justify the *florimania* of the Chinese for this plant. They have, by their attention to its culture, procured more than 300 species or varieties of it: every year produces a new one. A list of the names of all these would be tedious; we shall only say, that in its flowers are united all the possible combinations of shapes and colours. Its leaves are no less various: some are thin, others thick; some very small, and some large and broad; some indented like those of the oak, while others resemble those of the cherry tree; some may be seen in the form of fins, and others serrated on the margin, and tapering towards the points. *Parthenium* is propagated in China by seeds, and by suckers, grafts, and slips. When the florists have a fine plant, they suffer the seeds to ripen, and about the end of autumn sow them in well prepared earth. Some keep them in this manner, during winter, others sow them in spring. Provided they are watered after the winter, they shoot forth, and grow rapidly. After the *parthenium* is flowered, all its branches are cut three inches from the root, the earth is hoed around, and a little dung is mixed with it; and when the

old becomes severe, the plant is covered with straw, or an inverted pot. Those that are in vases are transported to the green-house, where they are uncovered and watered, and they shoot forth a number of stems; of these some florists leave only two or three, others pull up the stalk, together with the whole root, and divide it into several portions, which they transplant elsewhere. Some join two slips of different colours, in each of which, towards the bottom, they make a long notch, almost to the pith, and afterwards tie them together with packthread, that they may remain closely united; by these means they obtain beautiful flowers, variegated with whatever colours they choose. Parthenium requires a good exposure, and fresh moist air that circulates freely: when shut up closely, it soon languishes. The earth in which it is planted ought to be rich, moist, and loamy, and prepared with great care. For refreshing it, the Chinese use only rain or river water; and in spring they mix with this water the excrements of silk-worms, or the dung of poultry; in summer they leave the feathers of ducks or fowls to infuse in it for several days, after having thrown into it a little saltpetre; but in autumn they mix with the water a greater or smaller quantity of dried excrement reduced to powder, according as the plant appears more or less vigorous. During the great heats of summer, they water it morning and evening; but they moisten the leaves only in the morning: they also place small fragments of brick round its root, to prevent the water from pressing down the earth too much. By such minute care, the patient Chinese have procured from a wild and almost sinking plant, so beautiful and odoriferous flowers. The most common species are,

1. *PARTHENIUM HYSTEROPHORUS*; and

2. *PARTHENIUM INTEGRIFOLIUM*.

(1.) *PARTHENIUS*, an ancient Greek writer, whose age is uncertain; but his romance *De Amatoris Affectionibus*, is extant; and was published in 12mo at Basil, in 1531.

(2.) *PARTHENIUS*, in geography, a mountain of Arcadia, where Telephus had a temple, and on which Atalantis was exposed. Pauf. viii. 54. Ælian 13.

(3, 4.) *PARTHENIUS*; 1. a river of Paphlagonia; which runs through Bithynia, and falls into the Euxine Sea, near Sefamum, (*Herodot.*) 3. A river of European Sarmatia.

PARTHENOPEUS, the son of Meleager and Atalanta; one of the 7 chiefs who accompanied Adrastus in his expedition against Thebes.

(1.) *PARTHENOPE*, one of the SIRENS;

(2.) *PARTHENOPE*, an ancient name of NAPLES, so called from the Siren, who is said to have founded it.

(1.) *PARTHIA*, a celebrated empire of antiquity, bounded on the W. by Media; N. by Hyrcania, E. by Aria, S. by Carmania the desert; surrounded on every side by mountains, which still serve as a boundary, though its name is now changed to EYRAC or IRAC; and to distinguish it from Chaldea, to that of IRAC AGEMI.

(2.) *PARTHIA*, ANCIENT DIVISIONS OF. By Ptolemy it is divided into 5 districts, viz. Cami-

sine, or Gamisene, Parthyene, Choroane, Atticene, and Tabiene. The ancient geographers enumerate many cities in this country. Ptolemy reckons 25 large cities; and it certainly must have been very populous, since we have accounts of 2000 villages, besides a number of cities in this district being destroyed by earthquakes. Its capital was named *Hecatompolis*, from the circumstance of its having 100 gates. It was a noble and magnificent place; and according to some, it still remains under the name of ISPAHAN, the capital of the present Persian empire.

(3.) *PARTHIA, HISTORY OF, TILL THE DEATH OF ARSACES*. Parthia is by some supposed to have been first peopled by the *PHETIOI* or *PARTHII*, often mentioned in scripture, and will have the Parthians to be descended from *PARTHUSIM* the son of Misraim. But however true this may be with regard to the ancient inhabitants, yet it is certain, that those Parthians who were so famous in history, descended from the Scythians, though from what tribe we are not certainly informed. The history of the ancient Parthians is totally lost. All we know is, that they were first subject to the Medes, afterwards to the Persians, and lastly to Alexander the Great. After his death the province fell to Seleucus Nicator, and was held by him and his successors till the reign of Antiochus Theos, about A. A. C. 250. At this time the Parthians revolted, and chose one Arsaces for their king. The immediate cause of this revolt was the lewdness of Agathocles, to whom Antiochus had committed the care of all the provinces beyond the Euphrates. This man made an infamous attempt on Tridates, a youth of great beauty; which so enraged his brother Arsaces, that he excited his countrymen to revolt; and before Antiochus had leisure to attend to the rebellion, it became too powerful to be crushed. Seleucus Callinicus, the successor of Antiochus Theos, attempted to reduce Arsaces; but the latter having had so much time to strengthen himself, defeated and drove him out of the country. Seleucus soon after undertook another expedition against Arsaces, but was still more unfortunate; being not only defeated in a great battle, but taken prisoner; and he died in captivity. The day on which Arsaces gained this victory was ever after observed among the Parthians as an extraordinary festival. Arsaces being thus fully established in his new kingdom, reduced Hyrcania and some other provinces under his power; and was at last killed in a battle against Ariarathes IV. king of Cappadocia.

(4.) *PARTHIA, HISTORY OF, TILL THE DEATH OF ANTIOCHUS ZIDETES, AND SLAUGHTER OF HIS ARMY*. Arsaces I. was succeeded by his son Arsaces II. who, entering Media, made himself master of that country, while Antiochus the Great was engaged in a war with Antiochus Euergetes king of Egypt. Antiochus, however, was no sooner disengaged from that war, than he marched with all his forces against Arsaces, and at first drove him quite out of Media. But he soon returned with an army of 100,000 foot and 20,000 horse, with which he put a stop to the further progress of Antiochus; and a treaty was soon after

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ter concluded, in which it was agreed, that Arfaces should remain master of Parthia and Hyrcania, upon condition of his assisting him in his wars with other nations. Arfaces II. was succeeded by his son Priapatus, who reigned 15 years, and left three sons, Phrahates, Mithridates, and Artabanus. Phrahates, the eldest, succeeded to the throne, and reduced under his subjection the Mardi, who had never been conquered by any but Alexander the Great. After him, his brother Mithridates was invested with the regal dignity. He reduced the Bactrians, Medes, Persians, Elymeans, and over-ran all the east, penetrating beyond the boundaries of Alexander's conquests. Demetrius Nicator, who then reigned in Syria, endeavoured to recover these provinces, but his army was entirely destroyed, and himself taken prisoner, and kept captive till his death; after which Mithridates made himself master of Babylonia and Mesopotamia, so that he now commanded all the provinces between the Euphrates and the Ganges. Mithridates died in the 37th year of his reign, and left the throne to his son Phrahates II. who was scarce settled in his kingdom when Antiochus Zetes marched against him at the head of a numerous army, under pretence of delivering his brother Demetrius, who was still in captivity. Phrahates was defeated in three pitched battles; in consequence of which, he lost all the countries conquered by his father, and was reduced within the limits of the ancient Parthian kingdom. Antiochus did not, however, long enjoy his good fortune; for his army, on account of their number, amounting to no fewer than 400,000, being obliged to separate to such distances as prevented them, in case of any sudden attack, from joining together, the inhabitants, whom they had most cruelly oppressed, taking advantage of this separation, conspired with the Parthians to destroy them. This was accordingly executed; and the vast army of Antiochus, with the monarch himself, were slaughtered in one day, scarce a single person escaping to carry the news to Syria.

(5.) **PARTHIA, HISTORY OF, TILL THE DEATH OF CRASSUS JUNIOR.** Phrahates, elated with his success, proposed to invade Syria; but in the mean time, happening to quarrel with the Scythians, he was by them cut off with his whole army, and was succeeded by his uncle Artabanus; who enjoyed his dignity but a very short time, being, a few days after his accession, killed in another battle with the Scythians. He was succeeded by Pacorus I. who entered into an alliance with the Romans; and he by Phrahates III. This monarch took under his protection Tigranes the son of Tigranes the Great, king of Armenia, gave him his daughter in marriage, and invaded the kingdom, with a design to place the son on the throne of Armenia; but on the approach of Pompey he retired, and soon after renewed the treaty with the Romans. Phrahates was murdered by his sons Mithridates and ORODES; and soon after the former was put to death by his brother, who thus became sole master of the Parthian empire. In his reign happened the memorable war with the Romans under Crassus. This was occasioned, not by any breach of treaty on the side of the Parthians, but through the shameful avarice of

Crassus. The whole Roman empire had been divided between Cæsar, Pompey, and Crassus; and the eastern provinces had fallen to the lot of Crassus. No sooner was he invested with this dignity, than he resolved to carry the war into Parthia, to enrich himself with the spoils of that people, who were then very wealthy. Some of the tribunes opposed him, as the Parthians had religiously observed the treaty; but Crassus having, by the assistance of Pompey, carried every thing before him, left Rome in the year 55 B. C. and pursued his march to Brundisium, where he immediately embarked his troops, though the wind blew very high; and after a difficult passage, where he lost many of his ships, he reached the ports of Galatia. From Galatia, Crassus hastened to Syria, and passing through Judea; plundered the temple at Jerusalem. He then marched with great expedition to the Euphrates, which he crossed on a bridge of boats: and, entering the Parthian dominions, began hostilities. As the enemy had not expected an invasion, they were quite unprepared for resistance; and therefore Crassus over-ran all Mesopotamia; and if he had taken advantage of the consternation which the Parthians were in, might have also reduced Babylonia. But instead of this, early in autumn, he repassed the Euphrates, leaving only 7000 foot and 1000 horse to garrison the places he had reduced; and putting his army into winter quarters in Syria, gave himself totally up to his favourite passion of amassing money. Early in spring, he drew his forces out of their winter quarters, in order to pursue the war with vigour; but during the winter, Orodes had collected a very numerous army, and was well prepared to oppose him. Before he entered upon action, however, the Parthian monarch sent ambassadors to Crassus, to expostulate with him on his injustice in attacking an ally of the Roman empire; but Crassus only returned for answer, that "they should have his answer at Seleucia." Orodes, finding that a war was not to be avoided, divided his army into two bodies. One he commanded in person, and marched towards Armenia, in order to oppose the king of that country, who had raised a considerable army to assist the Romans. The other he sent into Mesopotamia, under SURENAS, a most experienced general, by whose conduct, all the cities which Crassus had reduced were quickly retaken. On this, some Roman soldiers, who made their escape, and fled to the camp of Crassus, filled the minds of his army with terror at the accounts of the number, power, and strength of the enemy. They told their fellow-soldiers, that the Parthians were very numerous, brave, and well disciplined; that it was impossible to overtake them when they fled, or escape them when they pursued; that their defensive weapons were proof against the Roman darts, and their offensive weapons so sharp, that no buckler was proof against them, &c. Crassus looked upon all this only as the effects of cowardice; but the soldiers, and even many of the officers, were so disheartened, that Crassus, the same who afterwards conspired against Cæsar, and most of the legionary tribunes, advised Crassus to suspend his march, and consider better of the enterprise before he proceeded farther in it. But

Crassus

Craſſus obſtinately perſiſted in his former reſolution, being encouraged by the arrival of Artabazus king of Armenia, who brought with him 6000 horſe, and promiſed to ſend 10,000 cuiraffiers, and 30,000 foot, whenever he ſhould ſtand in need of them. At the ſame time, he adviſed him not to march his army through the plains of Meſopotamia, but to take his route over the mountains of Armenia, as in every reſpect much ſafer. This ſalutary advice, however, was rejected, and Craſſus entered Meſopotamia with an army of about 40,000 men. The Romans had no ſooner croſſed the Euphrates, than Craſſus adviſed Craſſus to advance to ſome of thoſe towns in which the gariſons yet remained, to halt and reſreſh his troops: or to march along the Euphrates to Seleucia; and thus to prevent the Parthians from ſurrounding him, at the ſame time, that he would be plentifully ſupplied with provisions. Of this advice Craſſus approved, but was diſſuaded by Abgarus king of Edeſſa, whom the Romans took for an ally, but who was in reality a traitor ſent by Surenas to bring about their deſtruction. Under this faithleſs guide, the Romans entered a vaſt green plain divided by many rivulets. Their march proved at firſt very eaſy, but the farther they advanced, the worſe the roads became, inſomuch that they were at laſt obliged to climb up rocky mountains, which brought them to a dry and ſandy plain, where they could neither find food nor water. Abgarus then began to be ſuſpected by the tribunes and other officers, who earneſtly intreated Craſſus not to follow him any longer, but to retreat to the mountains; at the ſame time an expreſs arrived from Artabazus, acquainting the Roman general that Orodes had invaded his dominions with a great army, and that he was obliged to keep his troops at home, to defend his own dominions. The ſame meſſenger adviſed Craſſus to avoid by all means the barren plains, where his army would certainly periſh with hunger and frigate, and to approach Armenia, that they might join their forces againſt the common enemy. But Craſſus, inſtead of hearkening either to the advice of the king or his own officers, firſt flew into a violent paſſion with the meſſengers of Artabazus, and then told his troops, that they were not to expect the delights of Campania in the moſt remote parts of the world. Thus they continued their march croſs a deſert, the very ſight of which was ſufficient to throw them into deſpair; for they could not perceive the leaſt tree, plant, or brook, not ſo much as a ſingle blade of graſs; nothing all around them but huge heaps of burning ſand. The Romans had ſcarcely got through this deſert, when word was brought them by their ſcouts, that a numerous army of Parthians was advancing full ſpeed to attack them; for Abgarus, under pretence of going out on parties, had often conferred with Surenas, and concerted meaſures with him for deſtroying the Roman army. Upon this advice, which occaſioned great confuſion in the camp, the Romans being quite exhausted with their long march, Craſſus drew up his men in battalia, following at firſt the advice of Caſſius, who was for extending the infantry as wide as poſſible, that they might take up the more ground, and thus prevent the enemy from ſurrounding them; but Abgarus aſſuring the

proconſul that the Parthian forces were not ſo numerous as was repreſented, he changed this diſpoſition, and drew up his troops in a ſquare, which faced every way, and had on each ſide 12 cohorts in front. Near each cohort he placed a troop of horſe to ſupport them, that they might charge with the greater ſecurity and boldneſs. Thus the whole army looked more like one phalanx than troops drawn up in manipuli, with ſpaces between them, after the Roman manner. The general himſelf commanded in the centre, his ſon in the left wing, and Caſſius in the right. In this order they advanced to the banks of the *Baliſſus*, the ſight of which was very pleaſing to the ſoldiers, who were much haraſſed with drought and heat. Moſt of the officers were for encamping on the banks of this river, to give the troops time to reſreſh themſelves; but Craſſus, hurried on by the inconfiderate ardour of his ſon, only allowed the legions to take a meal ſtanding, and before this could be done by all, he ordered them to advance, not ſlowly, and halting now and then after the Roman manner, but as faſt as they could move, till they came in ſight of the enemy, who, contrary to their expectation, did not appear either ſo numerous or ſo terrible as they had been repreſented; but this was a ſtratagem of Surenas, who had concealed his men in convenient places, ordering them to cover their arms, left their brightneſs ſhould betray them, and, ſtarting up at the firſt ſignal, to attack the enemy on all ſides. The ſtratagem had the deſired effect; for Surenas no ſooner gave the ſignal, than the Parthians, riſing as it were out of the ground, with dreadful cries, and a moſt frightful noiſe, advanced againſt the Romans, who were greatly ſurpriſed and diſmayed at that ſight; and much more ſo, when the Parthians, throwing off the covering of their arms, appeared in ſhining cuiraffes, and helmets of burniſhed ſteel, ſinely mounted on horſes covered all over with armour of the ſame metal. At their head appeared young Surenas, in a rich dreſs, who was the firſt who charged the enemy, endeavouring, with his pikemen, to break through the firſt ranks of the Roman army; but finding it too cloſe and impenetrable, the cohorts ſupporting each other, he fell back, and retired in a ſeeming confuſion: but the Romans were much ſurpriſed when they ſaw themſelves ſuddenly ſurrounded on all ſides, and galled with continual ſhowers of arrows. Craſſus ordered his light-armed foot and archers to advance, and charge the enemy; but they were ſoon repulſed, and forced to cover themſelves behind the heavy armed foot. Then the Parthian horſe, advancing near the Romans, diſcharged ſhowers of arrows upon them, which did great execution, the legionaries being drawn up in ſuch cloſe order that it was impoſſible for the enemy to miſs their aim. As their arrows were of an extraordinary weight, and diſcharged with incredible force and impetuouſity, nothing was proof againſt them. The two wings advanced in good order to repulſe them, but to no effect; for the Parthians ſhot their arrows with as great dexterity when their backs were turned, as when they faced the enemy; ſo that the Romans, whether they kept their ground, or purſued the flying enemy, were equally annoyed with their fatal arrows,

rows,

rows. The Romans, as long as they had any hopes that the Parthians, after having spent their arrows, would either betake themselves to flight, or engage them hand to hand, stood their ground with great resolution and intrepidity; but when they observed that there were many camels in their rear loaded with arrows, and that those who emptied their quivers wheeled about to fill them anew, they began to lose courage, and to complain of their general for suffering them thus to stand still, and serve only as a butt to the enemy's arrows. Hereupon Crassus ordered his son to advance, and to attack the enemy with 1300 horse, 500 archers, and 8 cohorts. But the Parthians no sooner saw this choice body (for it was the flower of the army) marching up against them, than they wheeled about, and betook themselves, according to their custom, to flight. Hereupon young Crassus, crying out, *They fly before us*, pushed on full speed after them, not doubting but he should gain a complete victory; but when he was at a great distance from the main body of the Roman army, he perceived his mistake; for those who before had fled, facing about, charged him with incredible fury. Young Crassus ordered his troops to halt, hoping that the enemy, upon seeing their small number, would not be afraid to come to a close fight: but herein he was likewise greatly disappointed; for the Parthians, contenting themselves to oppose his front with their heavy-armed horse, surrounded him on all sides, and, keeping at a distance, discharged incessant showers of arrows upon the unfortunate Romans, thus surrounded and pent up. The Parthian cavalry, in wheeling about, raised so thick a dust, that the Romans could scarce see one another, far less the enemy. In a short time, the place where they stood was covered with dead bodies. Some of the unhappy Romans finding their entrails torn, and many overcome by the exquisite torments they suffered, rolled themselves in the sand and expired. Others endeavouring to tear out by force the bearded points of the arrows, only increased their pain. Most of them died in this manner; and those who outlived their companions were no more in a condition to act; for when young Crassus exhorted them to march up to the enemy, some showed him their wounded bodies, others their hands nailed to their bucklers, and some their feet pierced through and pinned to the ground; so that it was equally impossible for them to attack the enemy or defend themselves. The young commander, therefore, leaving his infantry to the mercy of the enemy, advanced at the head of the cavalry against their heavy-armed horse. The thousand Gauls whom he had brought with him from the west, charged the enemy with incredible boldness and vigour; but their lances did little execution on men armed with cuirasses, and horses covered with tried armour; however, they behaved with great resolution; for some of them taking hold of the enemy's spears, and closing with them, threw them off their horses on the ground, where they lay without being able to stir, by the great weight of their armour; others dismounting, crept under the enemy's horses, and thrusting their swords into their bellies, made them throw their riders. Thus the brave Gauls

fought, though greatly harassed with heat and thirst, which they were not accustomed to bear, till most of their horses were killed, and their commander dangerously wounded. They then thought it advisable to retire to their infantry, which they no sooner joined, than the Parthians invested them anew, making a most dreadful havoc of them with their arrows. In this desperate condition, Crassus, spying a rising ground at a small distance, led the remains of his detachment thither, with a design to defend himself in the best manner he could, till succours should be sent him from his father. The Parthians pursued him; and having surrounded him in his new post, continued showering arrows upon his men, till most of them were either killed or disabled, without being able to make use of their arms, or give the enemy proofs of their valour. Young Crassus had two Greeks with him, who had settled in the city of Carrhæ. These, touched with compassion at seeing so brave a man reduced to such straits, pressed him to retire with them to the city of Mænes, which had declared for the Romans; but the young Roman rejected their proposal, saying, that he would rather die a thousand times than abandon so many valiant men, who sacrificed their lives for his sake. He then embraced and dismissed them, giving them leave to retire and shift for themselves. As for himself, having now lost all hopes of being relieved, and seeing most of his men and friends killed around him, he gave way to his grief; and, not being able to make use of his arm, which was shot through with a large barbed arrow, he presented his side to one of his attendants, and ordered him to put an end to his unhappy life. His example was followed by Censorius a senator, by Megabacrus an experienced and brave officer, and by most of the nobility who served under him: 500 soldiers were taken prisoners, and the rest cut in pieces.

(6.) PARTHIA, HISTORY OF, TILL THE DEATH OF CRASSUS SENIOR. The Parthians, having thus cut off or taken the whole detachment commanded by young Crassus, marched without delay against his father, who, upon the first advice that the enemy fled before his son, and were closely pursued by him, had taken heart, the more because those who had remained to make head against him seemed to abate much of their ardour, the greatest part of them having marched with the rest against his son. Wherefore, having encouraged his troops, he had retired to a small hill in his rear, to wait there till his son returned from the pursuit. Young Crassus had dispatched frequent expresses to his father, to acquaint him with the danger he was in; but they had fallen into the enemy's hands, and been by them put to the sword: only the last, who had escaped with great difficulty, arrived safe, and informed him that his son was lost if he did not send him an immediate and powerful reinforcement. This news threw Crassus into the utmost consternation; but the desire he had of saving his son, and so many brave Romans who were under his command, made him immediately decamp, and march to their assistance. He was not gone far before he was met by the Parthians, who, with loud shouts, and songs of victory, gave, at a distance, the unhappy

happy father notice of his misfortune. They had cut off young Crassus's head, and, having fixed it on the point of a lance, were advancing full speed to fall on the father. As they drew near, Crassus was struck with the dismal sight, but behaved like an hero; for he had the presence of mind to stifle his grief, and to cry out to the dismayed troops, "This misfortune is entirely mine; the loss of one man cannot affect the victory: Let us charge, let us fight like Romans: If you have any compassion for a father who has lost a son whose valour you admired, let it appear in your rage and resentment against these insulting barbarians." Thus Crassus strove to reanimate his troops; but their courage was quite sunk, as appeared from the faint and languishing shout which they raised, according to custom, before the action. When the signal was given, the Parthians, keeping to their old way of fighting, discharged clouds of arrows on the legionaries, without drawing near them; which did such dreadful execution, that many of the Romans, to avoid the arrows, which occasioned a long and painful death, threw themselves in despair on the enemy's heavy-armed horse, seeking from their spears a more speedy death. Thus the Parthians continued plying them incessantly with their arrows till night, when they left the field of battle, crying out, that they would allow the father one night to lament the death of his son. This was a melancholy night for the Romans. Crassus kept himself concealed from the soldiers, lying not in the general's tent, but in the open air, and on the bare ground, with his head wrapped up in his military cloak; and was, in that forlorn condition, says Plutarch, a great example, to the vulgar, of the instability of fortune; to the wise, a still greater, of the pernicious effects of avarice, temerity, and ambition. Octavius, one of his lieutenants, and Cassius, endeavoured to raise him up and console him: but, seeing him quite sunk under his affliction, and deaf to all comfort, they summoned a council of war, composed of all the chief officers; wherein it was unanimously resolved, that they should decamp before day-break, and retire to Carrhæ, which was held by a Roman garrison. Agreeably to this resolution, they began their march as soon as the council broke up; which produced dreadful outcries among the sick and wounded, who, perceiving that they were to be abandoned to the mercy of the enemy, filled the camp with their complaints and lamentations: but their cries did not stop the march of the others, which indeed was very slow, to give the fraggers time to come up. There were only 300 light horse, under the command of one Ægnatius, who pursued their march without stopping. These arriving at Carrhæ about midnight, Ægnatius calling to the centinels on the walls, desired them to acquaint Coponius, governor of the place, that Crassus had fought a great battle with the Parthians; and, without letting them know who he was, continued his march to the bridge of Zeugma, which he passed, and thus saved his troops; but was much blamed for abandoning his general. However, the message he sent to Coponius was of some temporary service to Crassus; for that commander, wisely

conjecturing, from the manner in which the unknown person had given him that intelligence, that some misfortune had befallen Crassus, immediately ordered his garrison to stand to their arms, and, marching out, met Crassus, and conducted him and his army into the city: for the Parthians, though informed of his flight, did not offer to pursue him; but when it was day, they entered the Roman camp, and having put all the wounded, to the number of 4000, to the sword, dispersed their cavalry all over the plain, in pursuit of the fugitives. One of Crassus's lieutenants, named *Vargunteius*, having separated in the night from the main body of the army, with four cohorts, missed his way, and was overtaken by the enemy; at whose approach he withdrew to a neighbouring hill, where he defended himself with great valour, till all his men were killed, except so, who made their way through the enemy sword in hand, and got safe to Carrhæ: but *Vargunteius* himself was killed. In the mean time Surenas, not knowing whether Crassus and Cassius had retired to Carrhæ, or chosen a different route; in order to be informed of the truth, dispatched a messenger, who spoke the Roman language, to the city of Carrhæ, enjoining him to approach the walls, and acquaint Crassus himself, or Cassius, that the Parthian general was inclined to enter into a treaty with them, and demanded a conference. Both the proconsul and his questor Cassius spoke from the walls with the messenger; and accepting the proposal with great joy, desired that the time and place for an interview might be immediately agreed upon. The messenger withdrew, promising to return quickly with an answer from Surenas: but that general no sooner understood that Crassus and Cassius were in Carrhæ, than he marched thither with his whole army; and having invested the place, acquainted the Romans, that if they expected any favourable terms, they must deliver up Crassus and Cassius to him in chains. Hereupon a council of the chief officers being summoned, it was thought expedient to retire from Carrhæ that very night, and seek for another asylum. It was of the utmost importance that none of the inhabitants of Carrhæ should be acquainted with their design till its execution; but Crassus, whose conduct was infatuated, imparted the whole matter in confidence to one Andromachus, choosing him for his guide, and relying on the fidelity of a man whom he scarce knew. Andromachus immediately acquainted Surenas with the design of the Romans; promising at the same time, as the Parthians did not engage in the night, to manage matters so, that they should not get out of his reach before day-break. Pursuant to his promise, he led them through many windings and turnings, till he brought them into deep marshy grounds, where the infantry were up to the knees in mire. Then Cassius, suspecting that their guide had led them into those bogs with no good design, refused to follow him any longer; and, returning to Carrhæ, took his route towards Syria, which he reached with 500 horse. Octavius, with 5000 men under his command, being conducted by trusty guides, gained the mountains called by Plutarch and Apian *Sinnaci*, and there intrenched himself before break

break of day. As for Crassus, he was still entangled in the marshes, when Surenas, at the rising of the sun, overtook him, and invested him with his cavalry. The proconsul had with him 4 cohorts, and a small body of horse; and with these he gained, in spite of all opposition, the summit of another hill within 12 furlongs of Octavius; who, seeing the danger that threatened his general, flew to his assistance, first with a small number of his men, but was soon followed by all the rest, who, quitting their post, though very late, and, charging the Parthians with great fury, disengaged Crassus, and obliged the enemy to abandon the hill. Upon the retreat of the enemy, they formed themselves into an hollow square; and placing Crassus in the middle, made a kind of rampart round him with their bucklers, resolutely protesting, that none of the enemy's arrows should touch their general's body, till they were all killed fighting in his defence. Surenas, loth to let so fine a prey escape, surrounded the hill, as if he designed to make a new attack: but finding his Parthians very backward, and not doubting but the Romans, when night came on, would pursue their march, and get out of his reach, he had recourse again to artifice; and declared before some prisoners, whom he soon after set at liberty, that he was inclined to treat with the proconsul of a peace; and that it was better to come to reconciliation with Rome, than to sow the seed of an eternal war, by shedding the blood of one of her generals. Agreeably to this declaration, Surenas advanced towards the hill where the Romans were posted, attended only by some of his officers, and, with his bow unbent, and open arms, invited Crassus to an interview. So sudden a change seemed very suspicious to the proconsul; who therefore declined the interview, till he was forced, by his own soldiers, to intrust his life with an enemy whose treachery they had all experienced; for the legionaries, flocking round him, not only abused him in an outrageous manner, but even menaced him if he did not accept of the proposals made him by the Parthian general. Seeing, therefore, that his troops were ready to mutiny, he began to advance, without arms or guards, towards the enemy, after having called the gods and his officers to witness the violence his troops offered him; and intreated all who were present, but especially Octavius and Petronius, two of the chief commanders, for the honour of Rome, their common mother, not to mention, after his death, the shameful behaviour of the Roman legionaries. Octavius and Petronius could not resolve to let him go alone; but attended him down the hill, as did likewise some legionaries, keeping at a distance. Crassus was met at the foot of the hill by two Greeks; who, dismounting from their horses, saluted him with great respect; and desired him, in the Greek tongue, to send some of his attendants, who might satisfy him, that Surenas, and those who were with him, came without arms. Hereupon Crassus sent two brothers of the Rocien family; but Surenas, having caused them to be seized, advanced to the foot of the hill, mounted on a fine horse, and attended by the chief officers of his army. Crassus, who waited for the return of his

two messengers, was surprised to see himself prevented by Surenas in person, when he least expected it. The Parthian general, perceiving, as he approached Crassus, that he was on foot, cried out, in a seeming surprise, "What do I see? a Roman general on foot, and we on horseback! Let an horse be brought for him immediately." "You need not be surprised (replied Crassus); we are come only to an interview, each after the custom of his country." "Very well (answered Surenas), there shall be henceforth a lasting peace between king Orodes and the people of Rome; but we must sign the articles of it on the banks of the Euphrates; for you Romans do not always remember your conventions." Crassus would have sent for an horse: but a very stately one, with a golden bit, and richly caparisoned, was brought to him by a Parthian; which Surenas presenting to him, "Accept this horse from my hands (said he), which I give you in the name of my master king Orodes." He had scarce uttered these words, when some of the king's officers, taking Crassus by the middle, set him upon the horse, which they began to whip with great violence before them in order to make him quicken his pace. Octavius, offended at this insult, took the horse by the bridle; Petronius, and the few Romans who were present, seconded him, and flocking all round Crassus, stopped his horse. The Parthians endeavoured to repulse them, and clear the way for the proconsul; whereupon they began to jostle and push one another with great tumult and disorder. At last, Octavius, drawing his sword, killed one of the king's grooms; but at the same time another, coming behind Octavius, with a blow laid him dead at his feet. Both parties fought with great resolution, the Parthians striving to carry off Crassus, and the Romans to rescue him out of their hands. In this scuffle most of the Romans who came to the conference were killed; and among the rest Crassus himself, but whether by a Roman or a Parthian is uncertain. Upon his death, the rest of the army either surrendered to the enemy, or, dispersing in the night, were pursued, and put to the sword. The Romans lost in this campaign at least 30,000 men; of whom 20,000 were killed, and 10,000 taken prisoners.

(7.) PARTHIA. HISTORY OF, TILL THE DEATH OF ORODES. When the battle of Carrhæ was fought, king Orodes was in Armenia, where he had made peace with Artabazus. While the two kings were solemnizing their new alliance with expensive and public feasts, Syllaces, a Parthian officer, whom Surenas had sent with the news of his late victory, and the head of Crassus as a proof of it, arrived in the capital of Armenia. The transports of joy which Orodes felt at this sight, and these news, are not to be expressed; and the lords of both kingdoms, who attended their sovereigns, raised loud and repeated shouts of joy. Syllaces was ordered to give a more particular and distinct account of that memorable action; which when he had done, Orodes commanded melted gold to be poured into Crassus's mouth; reproaching him thereby with avarice, which had been always his predominant passion. Surenas did not long enjoy the pleasure of his victory; for Orodes, jealous of his power and authority among the Parthians,

thians, soon after caused him to be put to death. Pacorus, the king's favourite son, was put at the head of the army; and, agreeable to his father's directions, invaded Syria: but he was driven out with great loss by Cicero and Cassius, the only general who survived the death of Crassus. After this we find no mention of the Parthians, till the time of the civil war between Cæsar and Pompey, when the latter sent ambassadors to solicit succour against his rival. This Orodes was willing to grant, upon condition that Syria was delivered up to him; but as Pompey would not consent to such a proposal, the succours were not only denied, but, after the battle of Pharsalia, he put Lucius Hirtius in irons, whom Pompey had again sent to ask assistance, or at least to desire leave to shelter himself in the Parthian dominions. Cæsar is said to have meditated a war against the Parthians, which in all probability would have proved fatal to them. His death delivered them from this danger. But, not long after, the eastern provinces, being grievously oppressed by Mark Antony, rose up in arms; and, having killed the tax-gatherers, invited the Parthians to join them, and drive out the Romans. They very readily accepted the invitation, and crossed the Euphrates with a powerful army, under the command of Pacorus and Labienus a Roman general of Pompey's party. At first they met with great success, over ran all Asia Minor, and reduced all the countries as far as the Hellespont and Ægean Sea, subduing likewise Phœnicia, Syria, and even Judæa. They did not however long enjoy their new conquests: for being elated with their victories, and despising the enemy, they engaged Ventidius, Antony's lieutenant, before Labienus had time to join them, and were utterly defeated. This so disheartened Labienus's army, that they all abandoned him; and he himself, being thus obliged to wander from place to place in disguise, was at last taken and put to death at Cyprus. Ventidius pursuing his advantage, gained several other victories; and at last entirely defeated the Parthian army under Pacorus, cutting almost the whole of them in pieces, and the prince himself among the rest. He did not, however, pursue this last victory as he might have done; being afraid of giving umbrage to Antony, who had already become jealous of the great honour gained by his lieutenant. He therefore contented himself with reducing those places in Syria and Phœnicia which the Parthians had taken in the beginning of the war, until Antony arrived to take the command of the army upon himself. Orodes was almost distracted with grief, on receiving the dreadful news of the loss of his army and the death of his favourite son. However, when time had restored the use of his faculties, he appointed Phrahates, the eldest, but the most wicked, of all his children, to succeed him in the kingdom, admitting him at the same time to a share of the sovereign authority with himself. The consequence of this was, that Phrahates very soon attempted to poison his father with hemlock. But this, contrary to expectation, proving a cure for the dropsy, which an excess of grief had brought upon the king, the unnatural son had him stifled in bed; and soon after not only murdered all his own brethren, who were 39 in number, but

cut off all the rest of the royal family, not sparing even his own eldest son, lest the discontented Parthians should place him, as he was already of age on the throne.

(2.) PARTHIA, HISTORY OF, TILL THE DEFEAT AND RETREAT OF M. ANTONY. Many of the chief lords of Parthia, being intimidated by the cruelty of Phrahates, retired into foreign countries; and among these was one Monaces, a person of great distinction, as well as skill and experience in war. This man, having fled to Antony, soon gained his confidence, and was by him easily prevailed upon to engage in a war against his countrymen. But Phrahates, justly dreading the consequences of such a person's defection, sent a solemn embassy to invite him home on such terms as he should think fit to accept: which greatly provoked Antony; though he did not hinder him from returning, lest others should thereby be discouraged from coming over to him. He therefore dismissed him with great civility, sending ambassadors at the same time to Phrahates to treat of a peace. Thus he hoped to divert the Parthian monarch's attention from making the necessary preparations for war, and that he should be able to fall upon him in the spring when he was in no condition to make resistance. But here he was greatly disappointed; for on his arrival at the Euphrates, which he intended to pass, and enter the Parthian dominions on that side, he found all the passes so well guarded, that he thought proper to enter Media, with a design first to reduce that country, and then to enter Parthia. This plan had been suggested to him by Artabazus king of Armenia, who in the end betrayed him for instead of conducting the army the straight way from Zeugma on the Euphrates, to the Araxes which parted Media from Armenia, and which was about 500 miles distant from the place whence he first set out, Artabazus led them over rocks and mountains so far about, that the army marched above 1000 miles before they reached the border of Media, where they intended to begin the war. Thus they were not only greatly fatigued, but had not sufficient time, the year being far spent to put in execution the design on which they had come. However, as Antony was impatient to get back to Cleopatra, he left behind him most of the baggage of the army, and 300 waggons loaded with battering rams and other military engines for sieges; appointing Statianus, one of his lieutenants, with a body of 10,000 men, to guard them; and to bring them, by slower marches, after the army. With the rest of the forces he marched more than 300 miles before the rest, without allowing his men any respite till he arrived at Praaspa or Phrahata, the capital of Media, which he immediately invested. But the Parthians, well knowing that he could not make any progress without his military machines, passed by his army in order to attack Statianus; which they did with such success, that the body commanded by him were all to a man cut off, and all their military engines taken, among which was a battering ram 8 feet long. Antony, notwithstanding this disaster continued the siege of Praaspa; but was daily harassed by sallies of the garrison from within, and the enemy's army without. At last he began to

thirst

think of a retreat, when his provisions were almost exhausted, finding it impossible to become master of the city. But as he was to march 300 miles through the enemy's country, he thought proper first to send ambassadors to the Parthian monarch, acquainting him that the Romans were willing to allow him a peace, provided he would restore the standards and prisoners taken at Carrhæ. Phraates received the ambassadors, sitting on a golden throne; and, after having bitterly inveighed against the avarice and unbounded ambition of the Romans, told them that he would not part with the standards and prisoners; but that if Antony would immediately raise the siege of Praæpa, he would suffer him to retire unmolested. Antony who was reduced to great straits, no sooner received this answer than he broke up the siege, and marched towards Armenia. However, Phraates was not so good as his word; for the Romans were attacked by the enemy no fewer than 18 times on their march, and were thrice in the utmost danger of being cut off. A famine also raged in the Roman army; upon which they began to desert to the enemy; and indeed Antony would probably have been left by himself, had not the Parthians, in a very cruel as well as impolitic manner, murdered all those who fled to them in sight of the rest. At last, after having lost 33,000 men, and being reduced to such despair that he was with difficulty prevented from laying violent hands on himself, he reached the river A-raxes; when his men, finding themselves out of the reach of the enemy, fell down on the ground, and kissed it with tears of joy.

(9.) PARTHIA, HISTORY OF, TILL THE REDUCTION OF ITS CAPITAL BY TRAJAN. Antony was no sooner gone, than the kings of Media and Parthia quarrelled about the booty they had taken; and after various contests, Phraates reduced all Media and Armenia. After this, being elated with his conquests, he oppressed his subjects in such a cruel and tyrannical manner, that a civil war took place; in which the competitors were alternately driven out and restored, till A. D. 50, when one Vologeses, the son of Gortazes, a former king became peaceable possessor of the throne. He carried on some wars against the Romans, but with very indifferent success, and at last gladly consented to a renewal of the ancient treaties with that powerful people. From this time the Parthian history affords nothing remarkable till the reign of the emperor Trajan; when the Parthian king, COSROES, infringed the treaty with Rome, by driving out the king of Armenia. Upon this Trajan, who was glad of any pretence to quarrel with the Parthians, immediately hastened into Armenia. His arrival there was so sudden and unexpected, that he reduced almost the whole country without opposition; and took prisoner Parthamaspes, the king whom the Parthians had set up. After this he entered Mesopotamia, took the city of Nisibis, and reduced to a Roman province the whole of that wealthy country. Early in the spring of the following year, Trajan, who had kept his winter quarters in Syria, took the field again; but was warmly opposed by Cosroes. He found him encamped on the banks of the Euphrates, with a design to dispute his passage;

which he did with such vigour, that the emperor, after having several times attempted to ford that river, and been always repulsed with great slaughter, was obliged to cause boats to be built on the neighbouring mountains, which he privately conveyed from thence on carriages to the water side; and having, in the night time, formed a bridge with them, he passed his army the next day; but not without great loss and danger, the Parthians harassing his men the whole time with incessant showers of arrows, which did great execution. Having gained the opposite bank, he advanced boldly into Assyria, the Parthians flying everywhere before him, and made himself master of Arbela. Thence he pursued his march; subduing, with incredible rapidity, countries where the Roman standard had never been displayed before. Babylonia voluntarily submitted to him. The city of Babylon was, after a vigorous resistance, taken by storm; by which means he became master of all Chædea and Assyria, the two richest provinces of the Parthian empire. From Babylon he marched to Ctesiphon, the metropolis of the Parthian monarchy; which he besieged and at last reduced. But as to the particulars of these great conquests, we are quite in the dark: this expedition, however glorious to the Roman name, being rather hinted at than described, by the writers of those times.

(10.) PARTHIA, HISTORY OF, TILL THE REDUCTION OF THE WHOLE COUNTRY BY TRAJAN. While Trajan was thus making war in the heart of the enemy's country, Cosroes, having recruited his army, marched into Mesopotamia, with a design to recover that country, and cut off all communication between the Roman army and Syria. On his arrival in that province, the inhabitants flocked to him from all parts; and most of the cities, driving out the garrisons left by Trajan, opened their gates to him. Hereupon the emperor detached Lucius and Maximus, two of his chief commanders, into Mesopotamia, to keep such cities in awe as had not revolted, and to open a communication with Syria. Maximus was met by Cosroes; and having ventured a battle, his army was entirely defeated, and himself killed. But Lucius being joined by Euricius and Clarius, two other commanders sent by Trajan with fresh supplies, gained considerable advantages over the enemy, and retook the cities of Nisibis and Seleucia, which had revolted. And now Trajan seeing himself possessed of all the best and most fruitful provinces of the Parthian empire, but at the same time being well apprized that he could not without a vast expence, maintain his conquests, nor keep in subjection so fierce and warlike a people, at such a distance from Italy, resolved to set over them a king of his own choosing, who should hold the crown of him and his successors, and acknowledge them as his lords and sovereigns. With this view he repaired to Ctesiphon; and having there assembled the chief men of the nation, he crowned one of the royal family, named PARTHANASPATES, king of Parthia, obliging all who were present to pay him their allegiance. He chose Parthanaspathes, because that prince had joined him at his first entering the Parthian dominions: conducted him with great fidelity, and

shown on all occasions an extraordinary attachment to the Romans. Thus the Parthians were at last subdued, and their kingdom made tributary to Rome.

(11.) **PARTHIA, HISTORY OF, TO ITS CONQUEST BY CASSIUS.** The Parthians did not long continue in this state of subjection: for they no sooner heard of Trajan's death, which happened shortly after, than, taking up arms, they drove Parthaspates from the throne; and recalling Cosroes, who had retired into the country of the Hyrcanians, openly revolted from Rome. Adrian, who was then commander in chief of all the forces in the east, and soon after acknowledged emperor by the army, did not care, though he was at that time in Syria with a numerous army, to engage in a new war with the Parthians; but contented himself with preserving the ancient limits of the empire, without any ambitious prospects of further conquests. Therefore, in the beginning of his reign, he abandoned those provinces beyond the Euphrates which Trajan had conquered; withdrew the Roman garrisons from Mesopotamia; and, for the greater safety of other places, made the Euphrates the boundary of and barrier in those parts, posting his legions along the banks of that river. Cosroes died after a long reign, and was succeeded by his eldest son Vologeses II: in whose reign the Alani breaking into Media, then subject to the Parthians, committed there great devastations; but were prevailed upon, with rich presents sent them by Vologeses, to abandon that kingdom, and return home. Upon their retreat, Vologeses, having no enemy to contend with at home, fell unexpectedly upon Armenia; surprised the legions there; and having cut them all in pieces to a man, entered Syria; defeated with great slaughter Atilius Cornelianus, governor of that province; and advanced without opposition to the neighbourhood of Antioch; putting everywhere the Romans, and those who favoured them, to the sword. Hereupon the emperor Verus, by the advice of his colleague Antoninus furnished the philosopher, leaving Rome, hastened into Syria; and having driven the Parthians out of that province, ordered Statius Priscus to invade Armenia, and Cassius, with Marius Verus, to enter the Parthian territories, and carry the war into the enemy's country. Priscus made himself master of Artaxata; and in one campaign drove the Parthians, though not without great loss on his side, quite out of Armenia. Cassius, on the other hand, having in several encounters defeated Vologeses, though he had an army of 400,000 men under his command, reduced, in four years time, all those provinces which had formerly submitted to Trajan, took Seleucia, burnt and plundered the famous cities of Babylon and Ctesiphon, with the stately palaces of the Parthian monarchs, and struck terror into the most remote provinces of that great empire. On his return, he left above half the number of his forces by sickness and fatigue; so that, after all, the Romans, as Spartianus observes, had no great reason to boast of their victories and conquests.

(12.) **PARTHIA, HISTORY OF, TO ITS CONQUEST BY SEVERUS.** However, Verus, who had never stirred during the whole time of the war from Antioch and Daphne, took upon him the lofty ti-

tles of *Partbicus* and *Armenicus*, as if he had acquired them in the midst of his pleasures and debaucheries. After the revolt and death of Cassius, Antoninus the Philosopher repaired into Syria to settle the affairs of that province. On his arrival there, he was met by ambassadors from Vologeses; who, having recovered most of the provinces subdued by Cassius, and being unwilling either to part with them or engage in a new war, solicited the emperor to confirm him in the possession of them, promising to hold them of him, and to acknowledge the sovereignty of Rome. To these terms Antoninus readily agreed, and a peace was accordingly concluded between the two empires; which Vologeses did not long enjoy, being soon after carried off by a distemper, and not murdered by his own subjects, as we read in Constantinus Manasses, who calls him *Belegeses*. Upon his death, Vologeses III. the son of his brother Sanatruces, and grandson of Cosroes, was raised to the throne. He sided with Niger against the emperor Severus: who thereupon having settled matters at home, marched with all his forces against him; and advancing to the city of Ctesiphon, whither he had retired, laid close siege to that metropolis. Vologeses made a most gallant defence; but the city, after a long siege, and much bloodshed on both sides, was at length taken by assault. The king's treasures, with his wives and children, fell into the emperor's hands: but Vologeses himself had the good luck to make his escape; which was a great disappointment to Severus, who immediately dispatched an express to acquaint the senate with the success that had attended him in his expedition against the only nation that was then formidable to Rome.

(13.) **PARTHIA, HISTORY OF, TO ITS CONQUEST BY THE PERSIANS.** He had no sooner crossed the Euphrates, than Vologeses recovered all the provinces, except Mesopotamia, which he had reduced. These expeditions were chargeable to the Romans, and cost them much blood, without reaping any advantages from them; for as they had not sufficient forces to keep in awe the provinces they had subdued, the inhabitants, greatly attached to the family of Arsaces, never failed to return to their ancient obedience as soon as the Roman armies were withdrawn. Vologeses was soon after engaged in a war still more troublesome and destructive, with his brother Artabanus, who, encouraged by some of the discontented nobles, attempted to rob him of the crown, and place it on his own head. Vologeses gained several victories over his brother and rebellious subjects; but died before he could restore the empire to its former tranquillity. Artabanus, who had a numerous army at his devotion, did not meet with any opposition in seizing the throne, vacant by the death of his brother, though Tiridates had a better title to it, as being his eldest brother. He had scarce settled the affairs of his kingdom, when the Emperor Caracalla, desirous to signalize himself, as several of his predecessors had done, by some memorable exploit against the Parthians, sent a solemn embassy to him, desiring his daughter in marriage. Artabanus, overjoyed at this proposal, which he thought would be attended with a lasting peace between the two empires, received the amba-

ambassadors with all possible marks of honour, and readily complied with their request. . . Soon after, Caracalla sent a second embassy to acquaint the king that he was coming to solemnize the nuptials; whereupon Artabanus went to meet him attended with the chief of his nobility and his best troops, all unarmed, and in most pompous habits; but this peaceable train no sooner approached the Roman army, than the soldiers on a signal given them, falling upon the king's retinue, made a most terrible slaughter of the unarmed multitude, Artabanus himself escaping with great difficulty. The treacherous Caracalla, having gained by this exploit great booty, and, as he thought, no less glory, wrote a long and boasting letter to the senate, assumed the title of *Parthicus* for this piece of treachery; as he had before that of *Germanicus*, for murdering, in like manner, some of the German nobility. Artabanus, resolving to make the Romans pay dear for their inhuman and barbarous treachery, raised the most numerous army that had ever been known in Parthia, crossed the Euphrates, and entered Syria, putting all to fire and sword. But Caracalla being murdered before this invasion, Macrinus, who had succeeded him, met the Parthians at the head of a mighty army, composed of many legions, and all the auxiliaries of the states of Asia. The two armies no sooner came in sight of each other, than they engaged with the utmost fury. The battle continued two days; both Romans and Parthians fighting so obstinately, that night only parted them, without any apparent advantage on either side; though both retired when night had put an end to the contest, crying, *Victory, Victory*. The field of battle was covered all over with dead bodies, there being already above 40,000 killed, including both Romans and Parthians: nevertheless Artabanus was heard to say, that the battle was only begun, and that he would continue it till either the Parthians or Romans were all to a man cut in pieces. But Macrinus, being well apprised that the king came highly enraged against Caracalla in particular, and dreading the consequences which would attend the destruction of his army, sent an herald to Artabanus, acquainting him with the death of Caracalla, and proposing an alliance between the two empires. The king, understanding, that his great enemy was dead, readily embraced the proposals of peace and amity, upon condition that all the prisoners who had been taken by the treachery of Caracalla, should be immediately restored, and a large sum of money paid him to defray the expenses of the war. These articles being performed without delay, Artabanus returned into Parthia, and Macrinus to Antioch. As Artabanus lost on this occasion the flower of his army, Artaxerxes, a Persian of mean descent, but of great courage and experience in war, revolting from the Parthians, prevailed on his countrymen to join him, and attempt the recovery of the sovereign power, which he said they had been unjustly deprived of, first by the Macedonians, and afterwards by the Parthians their vassals. Artabanus upon the news of this revolt, marched with the whole strength of his kingdom to suppress it; but being met by Artaxerxes at the head of a no less powerful army, a bloody battle ensued, which is

said to have lasted three days. At length the Parthians, though they behaved with the utmost bravery, and fought like men in despair, were forced to yield to the Persians, who were commanded by a more experienced leader. Most of their troops were cut off in the flight; and the king himself was taken prisoner, and soon after put to death by Artaxerxes's order. The Parthians, having lost in this fatal engagement both their king and their army, were forced to submit to the conqueror, and become vassals to a nation which had been subject to them for 475 years.

PARTHIAN. *adj.* Of or belonging to Parthia.

PARTHIANS, the people of Parthia. For an account of the manners, customs, &c. of the ancient Parthians, see **PERSIA**.

PARTHICUS, a title absurdly assumed by the emperors Verus and Caracalla, upon their pretended conquest of Parthia. See **PARTHIA**, § 7. 13.

PARTHINI, an ancient people of Myricum. *Livy* xxix. 12; xliii. 30. *Sueton.* Aug. 19.

PARTHYENE; a province of Parthia, *Ptol.*

PARTI, **PARTIE**, **PARTY**, or **PARTED**, *part.* *adj.* in heraldry, is applied to a shield or escutcheon, denoting it divided or marked out into partitions. Thus,

1. **PARTI PER BEND DEXTER**, is when the cut comes from the upper corner of the shield on the right hand, and descends athwart to the opposite lower corner.

2. **PARTI PER BEND SINISTER**, is when the cut, coming from the upper left corner descends across to the opposite lower one.

3. **PARTI PER FESS**, is when the cut is across the middle from side to side.

4. **PARTI PER PALE**, is when the shield is divided perpendicularly into two halves. All these partitions according to M. de la Colombiere, have their origin from the cuts and bruises that have appeared on shields after engagements; and, being proofs of the dangers to which the bearers had been exposed, they gained them (them: for which reason they were transmitted to posterity, and became arms and marks of honour to their future families.

* **PARTIAL.** *adj.* [*partial*, French.] 1. Inclined antecedently to favour one party in a cause, or one side of the question more than the other.—Ye have not kept my ways but have been *partial* in the law. *Mal.* ii. 9.—Self-love will make men *partial* to themselves and friends, *Locke*. 2. Inclined to favour without reason; with *to* before the part favoured.—Thus kings heretofore who showed themselves *partial* to a party, had the service only of the worst part of their people. *Davenant*.—

Authors are *partial* to their wit, 'tis true, But are not critics to their judgment too? *Pope*.—In these, one may be sincerer to a reasonable friend, than to a fond and *partial* parent. *Pope*. 3. Affecting only one part; subsisting only in a part; not general; not universal; not total.—If we compare these *partial* dissolutions of the earth with an universal dissolution, we may as easily conceive an universal deluge from an universal dissolution, as a *partial* deluge from a *partial*. *Burnet*.—The weakening of a thing is only a *partial* destruction of it. *South*.—

All *partial* evil, universal good.

Pope.
(1.) * **PAR-**

(1.) * **PARTIALITY.** *n. f.* [*partialité*, Fr. from *partial*.] Unequal state of the judgment and favour of one above the other, without just reason.—Then would the Irish party cry out *partiality*, and complain he is not used as a subject. *Spenser*.—*Partiality* is properly the understanding's judging according to the inclination of the will and affections, and not according to the exact truth of things, or the merits of the cause. *South*.—As there is a *partiality* to opinions which is apt to mislead the understanding; so there is also a *partiality* to studies, which is prejudicial to knowledge. *Locke*.

(2.) **PARTIALITY.** See **PREJUDICE**, and **SELF-PARTIALITY**.

* **TO PARTIALIZE.** *v. a.* [*partializer*, Fr. from *partial*.] To make partial. A word, perhaps, peculiar to *Shakespeare*, and not unworthy of general use.—

Such neighbour nearness to our sacred blood
Should nothing privilege him, nor *partialize*
Th' untoothing firmness of my upright soul.

Shak.

* **PARTIALLY.** *adv.* [from *partial*.] 1. With unjust favour or dislike. 2. In part; not totally.—That stole into a total verity, which was but *partially* true in its covert sense. *Brown*.—The message he brought opened a clear prospect of eternal salvation, which had been but obscurely and *partially* figured in the shadows of the law. *Rogers*.

* **PARTIBILITY.** *n. f.* [from *partible*.] Divisibility; separability.

* **PARTIBLE.** *adj.* [from *part*.] Divisible; separable.—Make the moulds *partible*, glued or cemented together, that you may open them, when you take out the fruit. *Bacon*.—The same body, in one circumstance, is more weighty, and, in another, is more *partible*. *Digby on the Soul*.

* **PARTICIPABLE.** *adj.* [from *participate*.] Such as may be shared or partaken.—Plato, by his ideas, means only the divine essence with this connotation, as it is variously imitable or *participable* by created beings. *Norris's Miscellanies*.

* **PARTICIPANT.** *adj.* [*participant*, Fr. from *participate*.] Sharing; having share or part; with *of*.—He published his proclamation, offering pardon to all such as had taken arms, or been *participant* of any attempts against him. *Bacon*.—The prince saw he should confer with one *participant* of more than monkish speculations. *Watson*.—If any part of my body be so mortified that it becomes like a rotten branch of a tree, it putrifies, and is not *participant* of influence derived from my soul. *Hale*.

(1.) * **TO PARTICIPATE.** *v. n.* [*participo*, Lat. *participo*, Fr.] 1. To partake; to have share. The other instruments

Did see, and hear, devise, instruct, walk, feel,
And mutually *participate*.

Shak.

2. With *of*.—An aged citizen brought forth all his provisions, and said, that as he did communicate unto them his store, so would he *participate* of their wants. *Hayward*. 3. With *in*.—

His delivery, and the joy thereon,
In both which we, as next, *participate*. *Milton*.

4. To have part of more things than one.—Few creatures *participate* of the nature of plants and metals both. *Bacon*.—

God, when heav'n and earth he did create,
Form'd man, who should of both *participate*.

Denham.

—Those bodies, which are under a light, which is extended and distributed equally through all, should *participate* of each others colours. *Dryden*. 5. To have part of something common with another.—The species of audibles seem to *participate* more with local motion, like percussions made upon the air. *Bacon*.

(2.) * **TO PARTICIPATE.** *v. a.* To partake; to receive part of; to share.—Neither can we *participate* him without his presence. *Hooker*.—The French seldom achieved any honourable acts without Scottish hands, who therefore are to *participate* the glory with them. *Camden's Remains*.—Fellowship

Such as I seek, fit to *participate*

All rational delight.

Milton.

* **PARTICIPATION.** *n. f.* [*participation*, Fr. from *participate*.] 1. The state of sharing something in common.—In society, this good of mutual *participation* is so much larger. *Hooker*.—Their spirits are so married in conjunction with the *participation* of society, that they flock together in consent. *Shak. Henry IV*.—A joint coronation of himself and his queen might give any countenance of *participation* of title. *Bacon*. 2. The act or state of receiving or having part of something.—All things seek the highest, and covet more or less the *participation* of God himself. *Hooker*.—Those deities are so by *participation*, and subordinate to the supreme. *Stillingfleet*.—What an honour, that God should admit us into such a blessed *participation* of himself? *Atterbury*.—Convince them, that brutes have the least *participation* of thought, and they retract. *Bentley*.—Your genius should mount above that mist, in which its *participation* and neighbourhood with earth long involved it. *Pope*. 3. Distribution; division into shares.—It sufficeth not, that the country hath wherewith to sustain even more than live upon it, if means be wanting whereby to drive convenient *participation* of the general store into a great number of well-servers. *Ral-igh*.

* **PARTICIPIAL.** *adj.* [*participialis*, Lat.] Having the nature of a *participle*.

* **PARTICIPIALLY.** *adv.* [from *participle*.] In the sense or manner of a *participle*.

(1.) * **PARTICIPLE.** *n. f.* [*participium*, Latin.] 1. A word partaking at once the qualities of a noun and verb.—A *participle* is a particular sort of adjective, formed from a verb, and together with its signification of action, passion, or some other manner of existence, signifying the time thereof. *Clarke's Lat. Gram.* 2. Any thing that *participates* of different things. Not used.—The *participles* or confiners between plants and living creatures, are such as are fixed, though they have a motion in their parts; such as, oysters and cockles. *Bacon*.

(1.) * **PARTICLE.** *n. f.* [*particule*, Fr. *particula*, Lat.] 1. Any small portion of a great substance.—From any of the other unreasonable demands, the houses had not given their commissioners authority in the least *particle* to recede. *Clarendon*.—There is not one grain in the universe, nor so much

much as any one *particle* of it, that mankind may not be either the better or the worse for, according as 'tis applied. *L'Esfrange*.—

With *particles* of heavenly fire,
The God of nature did his soul inspire. *Dryd*.

Curious wits,

With rapture, with astonishment, reflect

On the small size of atoms which unite

To make the smallest *particle* of light. *Blackm*.

—It is not impossible, but that microscopes may at length be improved to the discovery of the *particles* of bodies, on which their colours depend.

Newton.—

Blest with more *particles* of heav'nly flame.

Granville.

2. A word unvaried by inflection.—²Till Arianism had made it a matter of sharpness and subtlety of wit to be a sound believing christian, men were not curious what syllables or *particles* of speech they used. *Hooker*.—The Latin varies the signification of verbs and nouns, not as the modern languages, by *particles* prefixed, but by changing the last syllables. *Locke*.—*Particles* are the words whereby the mind signifies what connection it gives to the several affirmations and negations that it unites in one continued reasoning or narration. *Locke*.—In the Hebrew tongue there is a *particle* consisting of but one single letter, of which there are reckoned above fifty several significations. *Locke*.

(2.) A *PARTICLE*, in physiology, (§ 1. *def*. 1.) is the minute part of a body, an assemblage of which constitutes all natural bodies. In the new philosophy *particle* is often used in the same sense with *ATOM* in the ancient Epicurean philosophy, and *CORPUSCULE* in the latter. Some writers, however, distinguish them; making *particle* an assemblage or composition of two or more primitive and physically indivisible corpuscles or atoms; and corpuscle or little body, an assemblage or mass of several particles or secondary corpuscles. The distinction, however, is of little moment; and, as to most purposes of physic, *particle* may be understood as synonymous with corpuscle. *Particles* are then the elements of bodies: it is the various arrangement and texture of these, with the difference of the cohesion, &c. that constitute the various kinds of bodies, hard, soft, liquid, dry, heavy, light, &c. The smallest particles or corpuscles cohere with the strongest attractions, and always compose bigger particles of weaker cohesion; and many of these cohering compose bigger particles whose vigour is still weaker; and thus on for divers successions, till the progression ends in the biggest particles, whereon the operations in chemistry, and the colours of natural bodies, depend, and which, by cohering, compose bodies of sensible bulks. The cohesion of the particles of matter, according to the Epicureans, was effected by hooked atoms; the Aristotelians thought it managed by rest, that is, by nothing at all. But Sir Isaac Newton shows it is done by means of a certain power, whereby the particles mutually *attract* or tend towards each other, which is still perhaps giving a fact without the cause. By this attraction of the particles, he shows that most of the phenomena of the lesser bodies are affected, as those of the heavenly bo-

dies are by the attraction of gravity. See *ATTRACTION* and *COHESION*.

(3.) *PARTICLE*, in grammar, (§ 1. *def*. 2.) is a denomination for all those words that unite or disjoin others; or that express the modes or manners of words or things. It comprehends all those parts of speech divided by grammarians into *ARTICLES*, *ADVERBS*, *PREPOSITIONS*, *INTERJECTIONS*, and *CONJUNCTIONS*. See these articles.

(4.) *PARTICLE*, in theology, is used in the Latin church for the crumbs or little pieces of consecrated bread, called in the Greek church *μυστήριον*. The Greeks have a particular ceremony, called *ἡ τὸν μυστήριον τῶν τριτύων* of the particles, wherein certain crumbs of bread, not consecrated, are offered up in honour of the Virgin, St John the Baptist, and several other saints. They also give them the name of *ἑορταίαι*, *oblation*. Gabriel archbishop of Philadelphia wrote a treatise expressive *ὑπὲρ τῶν μυστηρίων*, wherein he endeavours to show the antiquity of this ceremony, in that it is mentioned in the liturgies of St Chrysostom and Basil. There has been much controversy on this head between the reformed and catholic divines. Aubertin and Blondel explain a passage in the theory of Germanus patriarch of Constantinople, where he mentions the ceremony of the particles as in use in his time, in favour of the former; Messieurs de Port Royal contest the explanation; but M. Simon, in his notes on Gabriel of Philadelphia, endeavours to show that the passage itself is an interpolation, not being found in the ancient copies of Germanus, and consequently that the dispute is very ill grounded.

(5.) *PARTICLES*, *ORGANIC*, are those small moving bodies which are imperceptible without the help of glasses; for besides those animals which are perceptible to the sight, some naturalists reckon this exceedingly small species as a separate class, if not of animals properly so called, at least of moving bodies, which are found in the semen of animals, and which cannot be seen without the help of the microscope. In consequence of these observations, different systems of generation have been proposed, concerning the spermatic worms of the male and the eggs of the female. (See *ANATOMY*, *Index*.) In Buffon's Natural History, vol. 2. several experiments are related, tending to show that those moving bodies which we discover by the help of glasses in the male semen are not real animals, but organic, lively, active, and indestructible molecules, which possess the property of becoming a new organized body similar to that from which they were extracted. Buffon found such bodies in the female as well as in the male semen; and he supposes that the moving bodies which he observed with the microscope in infusions of the germs of plants are likewise vegetable organic molecules. Needham, Wrisberg, Spallanzani, and several other writers on the animal economy, have pursued the same tract with M. de Buffon. Some suppose that these organic molecules in the semen answer no purpose but to excite the venereal desire: but such an opinion cannot be well founded; for eunuchs who have no seminal liquor, are nevertheless subject to venereal desire. With respect to the

the beautiful experiments which have been made with the microscope on organic molecules. M. Bonnet, that learned and excellent observer of nature, remarks, that they seem to carry us to the farthest verge of the sensible creation, did not reason teach us that the smallest visible globule of feminal liquor, is the commencement of another universe, which, from its infinite smallness, is beyond the reach of our best microscopes. *Animalcules*, properly so called, must not be confounded with the wonderful organic particles of Buffon. See *ANIMALCULE*.

(1.) * *PARTICULAR*. *adj.* [*particulier*, Fr.] 1. Relating to single persons; not general.—He, as well with general orations, as *particular* dealing with men of most credit, made them see how necessary it was. *Sidney*.—As well for *particular* application to special occasions, as also in other manifold respects, infinite treasures of wisdom are abundantly to be found in the holy scripture. *Hooker*.

2. Individual; one distinct from others. —Wheresoever one plant draweth such a *particular* juice out of the earth, as it qualifyeth the earth, so as that juice, which remaineth is fit for the other plant; there the neighbourhood doth good. *Bacon*.—This is true of actions considered in their general nature or kind, but not considered in their *particular* individual instances. *South*. —Artists, who propose only the imitation of such a *particular* person, without election of ideas, have often been reproached for that omission. *Dryden*. 3. Noting properties or things peculiar.—Of this prince there is little *particular* memory. *Bacon*. 4. Attentive to things single and distinct.—I have been *particular* in examining the reason of children's inheriting the property of their fathers. *Locke*. 5. Single; not general; one among many. —Rather performing his general commandment, which had ever been, to embrace virtue, than any new *particular*, sprung out of passion. *Sidney*. 6. Odd; having something that eminently distinguishes him from others. This is commonly used in a sense of contempt.

(2.) * *PARTICULAR*. *n. f.* 1. A single instance; a single point.—I must reserve some *particulars*, which it is not lawful for me to reveal. *Bacon*. —What is universal must needs proceed from some universal constant principle; the same in all *particulars*, which can be nothing else but human nature. *South*. —Having the idea of an elephant or an angle in my mind, the first and natural enquiry is, whether such a thing does exist? and this knowledge is only of *particulars*. *Locke*. —The master could hardly sit on his horse for laughing, all the while he was giving me the *particulars* of this story. *Addison*. —Vespasian he resembled in many *particulars*. *Swift*. 2. Individual; private person.—It is the greatest interest of *particulars*, to advance the good of the community. *L'Estrange*. 3. Private interest.—Our wisdom must be such, as doth not propose to itself to do our own *particular*, the partial and immoderate desire whereof poisoneth whereforever it taketh place; but the publick and common good. *Hooker*. —They apply their minds even with hearty affection and zeal, at the least, unto those branches of public prayer wherein their own *particular* is moved. *Hooker*.—

His general lov'd him

In a most dear *particular*.

Shak.

—We are likewise to give thanks for temporal blessings, whether such as concern the publick, or else such as concern our *particular*. *Duty of Man*. 4. Private character; single self; state of an individual.—

For his *particular*, I'll receive him gladly;

But not one follower.

Shak.

5. A minute detail of things singly enumerated. —The reader has a *particular* of the books, wherein this law was written. *Ayliffe*. 6. In *Particular*. Peculiarly; distinctly.—Invention is called a muse, authors ascribe to each of them in *particular*, the sciences which they have invented. *Dryden*. —And if we will take them, as they were directed, in *particular* to her, or in her, as their representative, to all other women, they will, at most, concern the female sex only. *Locke*.—This in *particular* happens to the lungs. *Blackmore*.

* *PARTICULARITY*. *n. f.* [*particularité*, Fr. from *particular*.] 1. Distinct notice or enumeration.—So did the boldness of their affirmation accompany the greatness of what they did affirm, even descending to *particularities*, what kingdoms he should overcome. *Sidney*. 2. Singleness; individuality; single act; single case.—Knowledge imprinted in the minds of all men, upon which conclusions grow, in *particularity*, the choice of good and evil. *Hooker*. 3. Petty account; private incident.—To see the titles that were most agreeable to such an emperor, the flatteries that he lay open to, with the like *particularities* only to be met with on medals, are certainly not a little pleasing. *Addison*. 4. Something belonging to single persons.—

Let the general trumpet blow his blast,

Particularities and petty sounds

To cease.

Shak. Henry VI.

5. Something peculiar.—I saw an old heathen altar, with this *particularity*, that it was hollowed like a dish at one end. *Addison on Italy*.—He applied himself to the coquette's heart; there occurred many *particularities* in this dissection. *Addison*.

* To *PARTICULARIZE*. *v. a.* [*particulariser*, Fr. from *particular*.] To mention distinctly; to detail; to shew minutely.—The leanness that afflicts us, is an inventory to *particularize* their abundance. *Shaksp. Coriol.*—He not only boasts of his parentage as an Israelite, but *particularizes* his descent from Benjamin. *Atterbury*.

* *PARTICULARLY*. *adv.* [from *particular*.] 1. Distinctly; singly; not universally.—Providence, that universally casts its eye over all the creation, is yet pleased more *particularly* to fasten it upon some. *South*. 2. In an extraordinary degree.—This exact propriety of Virgil, I *particularly* regarded as a great part of his character. *Dryden*.—With the flower and the leaf I was so *particularly* pleased, that I commend it to the reader. *Dryden*.

* To *PARTICULATE*. *v. a.* [from *particular*.] To make mention singly. Obsolete.—I may not *particulate* of Alexander Hales, the irrefragable doctor. *Camden's Remains*.

(I.) *PARTING*, *n. f.* in metallurgy. See *METALLURGY*, Part II, Sect. IV; and Part III.

(II.) *PARTING*, in chemistry, an operation by which gold and silver are separated from each other.

other. As these two metals resist equally well the action of fire and of lead, they must therefore be separated by other methods. This separation could not be effected if they were not soluble by different menstrua. Nitrous acid, marine acid, and sulphur, which cannot dissolve gold, attack silver very easily; and therefore these three agents furnish methods of separating silver from gold, or of the operation called *parting*. Parting by nitrous acid is the most convenient, and therefore most used, and even almost the only one employed by goldsmiths and coiners. Wherefore it is called simply *parting*. That made with the marine acid, is only made by cementation, and is known by the name of *concentrated parting*. Lastly, parting by sulphur is made by fusion, which the chemists call the *dry way*, and is therefore called *dry parting*.

I. **PARTING BY AQUAFORTIS.** Although parting by aquafortis be easy, it cannot be very exact, unless we attend to some essential circumstances. I. The gold and silver must be in a proper proportion: for if the gold be in too great quantity, the silver will be covered and guarded by it from the action of the acid. Therefore, when the essayers do not know the proportion of these two metals in the *mass* to be operated upon, they discover it by the following method: They have a certain number of needles composed of gold and silver alloyed together in graduated proportions; and the alloy of each needle is known by a mark upon it. These are called *proof needles*. When essayers want to know early the proportion of gold and silver in a *mass*, they rub this *mass* upon a touchstone, so as to leave a mark upon it. They then make marks upon the touchstone with some of the needles, the colour of which they think comes nearest to that of the *mass*. By comparing the marks of these needles with the mark of the *mass*, they discover nearly the proportion of the gold and silver in the *mass*. If this trial shows, that in any given *mass* the silver is not to the gold as three to one, this *mass* is improper for the operation of parting by aquafortis. In this case, the quantity of silver necessary to make an alloy of that proportion must be added. This operation is called **QUARTATION**, probably because it reduces the gold to a fourth part of the whole *mass*. II. That the parting may be exact, the nitrous acid or aquafortis employed must be very pure, and especially free from mixture of vitriolic and marine acids. For if this be not attended to, a quantity of silver proportionable to these two foreign acids will be separated during the solution; and this portion of silver, reduced by these acids to vitriol of silver and to luna cornea, will remain mingled with the gold, which consequently will not be entirely purified by the operation. When the metallic *mass* is properly alloyed, it is to be reduced to plates, rolled up spirally, called *cornets*; or to grains. These are to be put into a matrass, and upon them a quantity of aquafortis is to be poured, the weight of which is to that of the silver as three to two; and as the nitrous acid employed for this operation is rather weak, the solution is assisted, especially at first, by the heat of a sand bath, in which the matrass is to be placed. When, notwithstanding

ing the heat, no further mark of solution appears, the aquafortis charged with silver is to be decanted. Fresh nitrous acid is to be poured into the matrass, stronger than the former, and in less quantity, which must be boiled on the residuous *mass* and decanted as the former. Aquafortis must even be boiled a 3d time on the remaining gold, that all the silver may be certainly dissolved. The gold is then to be washed with boiling water. This gold is very pure if the operation has been performed with due attention: It is called *gold of parting*. No addition of silver is required, if the quantity of silver of the *mass* is evidently much more considerable than that of the gold: persons who have not proof needles and other apparatus to determine the proportion of the alloy, may add to the gold an indeterminate quantity of silver, observing that this quantity be rather too great than too small, and so considerable as to render the *mass* nearly as white as silver; for a large quantity of silver is rather favourable than hurtful to the operation: It has no other inconvenience than an useless expense, as the larger the quantity is of silver, the more aquafortis must be employed. We ought to attend to this fact, that the colour of gold is scarcely perceptible in a *mass* two 3ds of which are silver and one 3d is gold; this colour then must be much less perceptible when the gold is only one 4th part, or less, of the whole *mass*. If the quantity of gold exceeds that of the silver, the *mass* may be exposed to the action of aqua-regia, which would be a kind of *inverse parting*; because the gold is dissolved in that menstruum, and the silver is not, but rather reduced to luna cornea, which remains in form of a precipitate after the operation. But this method is seldom or never practised; for the silver is not so accurately separated from the gold by aqua-regia, as the gold is from the silver by aquafortis. The gold, after the parting by aquafortis, is much more easily collected when it remains in small masses than when it is reduced to powder. When the *mass* has been regularly *quarted*, that is, when it contains three parts of silver and one part of gold, we must employ, particularly for the first solution, an aquafortis so weakened that heat is required to assist the solution of the silver; by which means the solution is made gently; and the gold which remains preserves the form of the small masses before the solution. If the aquafortis employed were stronger, the parts of the gold would be disunited and reduced to the form of a powder, from the activity with which the solution would be made. We may indeed part by aquafortis a *mass* containing two parts of silver to one part of gold: but then the aquafortis must be stronger; and if the solution be not too much hastened, the gold will more easily remain in masses after the operation. In both cases, the gold will be found to be tarnished and blackened. Its parts have no adhesion together, because the silver dissolved from it has left many interstices; and the *cornets* or grains of this gold will be easily broken, unless they be handled very carefully. To give them more solidity, they are generally put into a test under a muffle and made red hot; during which operation they contract considerably; and their parts are

approximated. These pieces of gold are then found to be rendered much more solid, so that they may be handled without being broken. By this operation also the gold resumes its colour and lustre; and as it generally has the figure of cornets, it is called *gold in cornets*, or *grain gold*. Effayers avoid melting it, as they choose to preserve this form, which shows that it has been parted. The gold and silver thus operated upon ought to have been previously refined by lead, and freed from all alloy of other metallic matters, so that the gold which remains should be as pure as is possible. However, as this is the only metal which resists the action of aquafortis, it might be purified by parting from all other metallic substances; but this is not generally done, for several reasons. First, because the refining by lead is more expeditious and convenient for the separation of the gold from the imperfect metals; 2dly, because the silver, when afterwards separated from the aquafortis, is pure; lastly, because, as most imperfect metals do not remain completely and entirely dissolved in nitrous acid, the gold would be found after the parting mixed with the part of these metals which is precipitated. The gold remaining after the parting ought to be well washed, to cleanse it from any of the solution of silver which might adhere to it; and for this purpose distilled water ought to be used, or at least water the purity of which has been ascertained by its not forming a precipitate with a solution of silver, because such a precipitate would alter the purity of the gold. The silver dissolved in the aquafortis may be separated, either by distillation, in which case all the aquafortis is recovered very pure, and fit for another parting; or it may be precipitated by some substance which has a greater affinity than this metal with nitrous acid. Copper is generally employed for this purpose at the mint. The solution of silver is put into copper vessels. The aquafortis dissolves the copper, and the silver precipitates. When the silver is all precipitated, the new solution is decanted, which is then a solution of copper. The precipitate is to be well washed, and may be melted into an ingot. It is called *parted silver*. When this silver has been obtained from a mass which had been refined by lead, and when it has been well washed from the solution of copper, it is very pure. Mr Cramer observes justly, in his *Treatise on Falsifying*, that however accurately the operation of parting has been performed, a small portion of silver always remains united with the gold, if the parting has been made by aquafortis; or a small portion of the gold remains united with the silver, if the parting has been made by aqua-regia; and he estimates this small alloy to be from a 200th to a 150th part; which quantity may be considered as nothing for ordinary purposes, but may become sensible in accurate chemical experiments. (*Chem. Dict.*) The mass of gold and silver to be parted ought previously to be granulated; which may be done by melting it in a crucible, and pouring it into a large vessel full of cold water, while at the same time a rapid circular motion is given to the water by quickly stirring it round with a stick or broom. The aquafortis ought to be so strong as to be capable of acting sensibly on silver when cold, but

not so strong as to act violently. If the aquafortis be very strong, however pure, and if the vessels be well closed, a small quantity of the gold will be dissolved along with the silver, which is to be guarded against. Little heat ought to be applied at the beginning, the liquor being apt to swell and rise over the vessel; but when the acid is nearly saturated, the heat may be safely increased. When the solution ceases, which may be known by the discontinuance of the effervescence, or emission of air-bubbles, the liquor is to be poured off. If any grains appear entire, more aquafortis must be added, that all the silver may be dissolved. If the operation has been performed slowly, the remaining gold will have still the form of distinct masses, which are to receive solidity and colour by fire, as above directed. If the operation has been performed hastily, the gold will have the appearance of a black mud or powder, which, after 5 or 6 washings with pure water, must be melted. The silver may be recovered by precipitating it from the aquafortis by small plates of copper thrown along with the liquor into glass vessels. A considerable heat is required to accelerate this precipitation. Dr Lewis says, he has observed, that when the aquafortis was perfectly saturated with silver, no precipitation was occasioned by plates of copper, till a drop or two of aquafortis was added to the liquor, and then the precipitation began and continued as usual. The precipitated silver must be well washed in boiling water, and fused with some nitre; the use of which is to scoria any cupreous particles which may adhere to the silver. From the solution of copper in aquafortis, a blue pigment, called *verditer*, is obtained by precipitation with whiting. *Notes to Chem. Dict.*

2. PARTING BY CEMENTATION. CONCENTRATED PARTING is performed by cementation, and is used when the quantity of gold is so great in proportion to the silver, that it cannot be separated by aquafortis. (See CEMENT, § 4.) This operation is done in the following manner. A cement is first prepared, composed of four parts of bricks powdered and sifted, of one part of green vitriol calcinated till it becomes red, and of one part of common salt. The whole is very accurately mixed together, and a firm paste is made of it by moistening it with a little water or urine. This cement is called *cement royal*, because it is employed to purify gold, which was styled by alchemists *the king of metals*. The gold to be cemented is to be reduced to thin plates, as thin as small pieces of money. At the bottom of the crucible or cementing pot, a stratum of cement, of the thickness of a finger, is to be put, which is to be covered with plates of gold; upon these another stratum of cement is to be laid, and then more plates of gold, till the crucible is filled with these alternate strata of cement and of gold. The whole is then to be covered with a lid, which is to be luted with a mixture of clay and sand. This pot is to be placed in a furnace or oven, and heated by degrees till it is moderately red, which heat is to be continued during 24 hours. The heat must not be so great as to melt the gold. The pot is then left to cool, and the gold is to be carefully separated from the cement, and boiled at different times in a large quantity of pure water.

ter. This gold is to be essayed upon a touchstone or otherwise; and if it be found not sufficiently purified, it is to be cemented a second time in the same manner. The sulphuric acid of the bricks and of the calcined vitriol disengages the acid of the common salt during this cementation; and this last acid dissolves the silver alloyed with the gold, and separates it by that means.—This experiment proves, that although the muriatic acid, while it is liquid, cannot attack silver, it is nevertheless a powerful solvent of that metal. But for this purpose it must be applied to the silver in the state of vapours, extremely concentrated, and assisted with a considerable heat. All these circumstances are united in the concentrated parting. This experiment proves also, that notwithstanding all these circumstances, which favour the action of the muriatic acid, it is incapable of dissolving gold. Lastly, the muriatic acid in this state more effectually dissolves the silver than the nitrous acid does in the parting by aquafortis, since this operation succeeds well when the silver is in so small a proportion as that it would be protected from the action of the nitrous acid in the ordinary parting. Instead of sea-salt, nitre may be used with equal success; because the nitrous acid is then put in a state to attack the silver, notwithstanding the quantity of gold which covers it.

3. PARTING BY FUSION, OR DRY PARTING, is performed by sulphur, which has the property of uniting easily with silver, while it does not attack gold. This method of separating these two metals would be the cheapest, the most expeditious and convenient of any, if the sulphur could dissolve the silver, and separate it from the gold as well and as easily as nitrous acid does: but, on the contrary, we are obliged to employ a particular treatment, and a kind of concentration, to begin the union of the sulphur alloyed with gold. Then repeated and troublesome fusions must be made, in each of which we are obliged to add different intermediate substances, and particularly the metals which have the strongest affinity with sulphur, to assist the precipitation, which in that case does not give a regulus of pure gold, but a gold still alloyed with much silver, and even with a part of the precipitating metals; so that, to complete the operation, cupellation is necessary, and also parting by aquafortis. It is therefore evident, that this operation ought not to be made but when the quantity of silver with which the gold is alloyed is so great, that the quantity of gold which might be obtained by the ordinary parting is not sufficient to pay the expenses; and that it is only proper for concentrating a larger quantity of gold in a smaller quantity of silver. As this dry parting is troublesome, and even expensive, it ought not to be undertaken but on a considerable quantity of silver alloyed with gold. Accordingly Cramer, Schlutter, Schlinder, and all good chemists and artists who have processes for the dry parting, recommend its use only in such cases. As this operation for extracting a small quantity of gold from a large quantity of silver is, notwithstanding its inconveniences, approved by Schlutter, Shaffer, and other authors, and practised in Hartz, we shall add what Dr Lewis, in his *History of Gold*, has said upon the subject. The most advantageous

method of separating a small portion of gold from a large one of silver, appears to be by sulphur, which unites with and scorifies the silver without affecting the gold; but as sulphurated silver does not flow thin enough to suffer the small particles of gold diffused through it to reunite and settle at the bottom, some addition is necessary for collecting and carrying them down. In order to the commixture with the sulphur, 50 or 60 lb. of the mixed metal, or as much as a large crucible will receive, are melted at once, and reduced into grains, by taking out the fluid matter with a small crucible made red-hot, and pouring it into cold water stirred with a rapid circular motion. From $\frac{1}{2}$ to $\frac{3}{4}$ of the granulated metal, according as it is richer or poorer in gold, is reserved, and the rest well mingled with $\frac{1}{2}$ of powdered sulphur. The grains enveloped with the sulphur are again put into the crucible, and the fire kept gentle for some time, that the silver, before it melts, may be thoroughly penetrated by the sulphur: if the fire be hastily urged, great part of the sulphur will be dissipated, without acting upon the metal. If to sulphurated silver in fusion pure silver be added, the latter falls to the bottom, and forms there a distinct fluid not miscible with the other. The particles of gold, having no affinity with the sulphurated silver, join themselves to the pure silver, wherever they come in contact with it, and are thus transferred from the former into the latter, more or less perfectly, according as the pure silver was more or less thoroughly diffused through the mixed. It is for this use that a part of the granulated metal was reserved. The sulphurated mass being brought into perfect fusion, and kept melted for near an hour in a close covered crucible, one third of the reserved grains is thrown in; and as soon as this is melted, the whole is well stirred, that the fresh silver may be distributed through the mixed to collect the gold from it. The stirring is performed with a wooden rod; an iron one would be corroded by the sulphur, so as to deprive the mixed of its due quantity of sulphur, and likewise render the subsequent purification of the silver more troublesome. The fusion being continued an hour longer, another third of the unsulphurated grains is added, and an hour after this the remainder; after which the fusion is further continued for some time, the matter being stirred at least every half hour from the beginning to the end, and the crucible kept closely covered in the intervals. The sulphurated silver appears in fusion of a dark brown colour; after it has been kept melted for a certain time, a part of the sulphur having escaped from the top, the surface becomes white, and some bright drops of silver, about the size of pease, are perceived on it. When this happens, which is commonly in about three hours after the last addition of the reserved grains, sooner or later, according as the crucible has been more or less closely covered, and the matter continued, for otherwise more and more of the silver, thus losing its sulphur, would subside, and mingle with the part at the bottom in which the gold is collected; the whole is poured out into an iron mortar greased and duly heated; or if the quantity is too large to be safely lifted at once, a part is first taken out from the

top with a small crucible, and the rest poured into the mortar. The gold diffused at first through the whole mass, is now found collected into a part of it at the bottom, amounting only to about as much as was reserved unfulphurated. This part may be separated from the sulphurated silver above it by a chisel and hammer; or more perfectly, the surface of the lower mass being generally rugged and unequal, by placing the whole mass with its bottom upwards in a crucible: the sulphurated part quickly melts, leaving unmelted that which contains the gold, which may thus be completely separated from the other. The sulphurated silver is essayed by keeping a portion of it in fusion in an open crucible till the sulphur is dissipated, and then dissolving it in aqua fortis. If it should still be found to contain any gold, it is to be melted again; as much more unfulphurated silver is to be added as was employed in each of the former injections, and the fusion continued about an hour and a half. The gold thus collected into a part of the silver may be further concentrated into a smaller part, by granulating the mass and repeating the whole process. The operation may be again and again repeated, till so much of the silver is separated that the remainder may be parted without much expence. This process, according to M. Schlutter, is practised at Rammelsberg in Lower Hartz. The prevailing metal in the ore of Rammelsberg is lead: the quantity of lead is at most 40 lb. on a quintal of 100 lb. of the ore. The lead worked off on a test or concave hearth, yields about 110 grains of silver, and the silver contains only a 384th part of gold; yet this little quantity of gold, amounting scarcely to a third of a grain in a hundred weight of this ore, is thus collected with profit. The author above mentioned confines this method of separation to such silver as is poor in gold, and reckons parting with aquafortis more advantageous where the gold amounts to above a 64th of the silver: he advises also not to attempt concentrating the gold too far, as a portion of it will always be taken up again by the silver. Mr Schiefer, however, relates, (in the *Swedish Memoirs* for 1752), that he has by this method brought the gold to perfect fineness; and that he has likewise collected all the gold which the silver contained; the silver of the last operations, which had taken up a portion of the gold, being reserved to be worked over again with a fresh quantity of gold-holding silver. The sulphurated silver is purified by continuing it in fusion for some time with a large surface exposed to the air; the sulphur gradually exhales and leaves the silver entire.

PARTING-GLASSES, n. f. Glass vessels used for parting gold and silver. They have the form of truncated cones, the bottom being commonly about 7 inches wide, the aperture about one or two inches wide, and the height about 12 inches. These vessels ought to have been well annealed, and chosen free from flaws; as one of the chief inconveniences attending the operation is, that the glasses are apt to crack by exposure to cold, and even when touched by the hand. Some operators secure their glasses by a coating. For this purpose they spread a mixture of quick lime, slaked with beer and whites of eggs, upon linen cloth,

which they wrap round the lower part of the vessel, leaving the upper part uncovered, that they may see the progress of the operation; and over this cloth they apply a composition of clay and hair. Schlutter advises to put the parting-glasses containing some water, and supported by trevets, with fire under them. When the heat communicated by the water is too great, it may be diminished by adding cold water; which must be done very carefully by pouring against the sides of the pan, to prevent too sudden an application of cold to the parting-glass. The intention of this contrivance is, that the contents of the glasses, if these should break, may be received by the copper vessel. Into a glass 15 inches high, and 10 or 12 inches wide at bottom, placed in a copper pan 12 inches wide at bottom, 15 inches wide at top, and 10 inches high, he usually put about 80 oz. of metal, with twice as much aquafortis.

- (1.) * **PARTISAN, n. f.** [*partisan*, French.]
4. A kind of pike or halberd.—

Let us

Make him with our pikes and *partisans*

A grave.

Shakesp. v. c's Hamlet.

Shall I strike at it with my *partisan*? *Shak.*

2. [From *parti*, French.] An adherent to a faction.—Some of these *partisans* concluded, the government had hired men to be bound and pinioned. *Addison*.—I would be glad any *partisan* would help me to a tolerable reason, that, because Clodius and Curio agree with me in a few singular notions, I must blindly follow them in all. *Swift*. 3. The commander of a party detached from the main body upon some sudden excursion. 4. A commander's leading staff. *Ainsl.*

(1.) A **PARTISAN**, in the art of war, (§ 1. *def.* 3.) is a person dexterous in commanding a party; who, knowing the country well, is employed in getting intelligence, or surprising the enemy's convoy, &c. It also means an officer sent out with the command of a body of light troops. This corps should be composed of infantry, light-horse, and hussars.

PARTISTAGNO, a town in the province of Friuli.

* **PARTITION, n. f.** [*partitiō*, Fr. *partitio*, Latin.] 1. The act of dividing; a state of being divided.—

Like to a double cherry, seeming parted,

But yet an union in *partition*.

Shak. Cymbeline.

2. Division; separation; distinction.—We have, in this respect, our churches divided by certain *partitions*, although not so many in number as theirs. *Hooker*.—

Can we not

Partition make, with spectacles so precious,

'Twixt fair and foul?

Shak. Cymbeline.

We shall be winnowed with so rough a wind.

That ev'n our corn shall seem as light as chaff,

And good from bad find no *partition*.

Shak.

—The day, month, and year, measured by them, are used as standard measures, as likely others arbitrarily deduced from them by *partition* or collection. *Holder on Time*. 3. Part divided from the rest; separate part.—

Lodg'd in a small *partition*.

Milton.

4. That by which different parts are separated.—It doth not follow, that God doth teach us to erect between us and them a *partition* wall of difference

ference. *Hooker*.—Make *partitions* of wood in a hoghead, with holes in them, and mark the difference of their sound from that of an hoghead without such *partitions*. *Bacon*.—

Partition, firm and sure,

The waters underneath from those above

Dividing.

Milton's Paradise Lost.

—Enclosures our factions have made in the church, become a great *partition* wall to keep others out of it. *Decay of Piety*.—At one end of it, is a great *partition*, designed for an opera. *Addison*.—The *partition* between good and evil is broken down. *Rogers*. 5. Part where separation is made.—

The mound was newly made, no fight could pass

Between the nice *partitions* of the grass. *Dryd.*

* *To PARTITION*. *v. a.* To divide into distinct parts.—These sides are uniform without, though severally *partitioned* within. *Bacon*.

* *PARTLET*. *n. f.* A name given to a hen; the original signification being a ruff or band, or covering for the neck. *Hanmer*.—

Thou dotard, thou art woman-tired; unroofed
By thy dame *partlet* here. *Shakespeare.*

Tir'd with pinn'd ruffs, and fans, and *partlet*
strips. *Hall.*

Dame *partlet* was the sovereign of his heart;
He feather'd her. *Dryden's Fables.*

* *PARTLY*. *adv.* [from *part*.] In some measure; in some degree; in part.—That part, which, since the coming of Christ, *partly* hath embraced, and *partly* shall hereafter embrace the Christian religion, we term the church of Christ. *Hooker*.—They thought it reasonable to do all possible honour to their memories; *partly* that others might be encouraged to the same patience and fortitude, and *partly* that virtue, even in this world, might not lose its reward. *Nelson*.—The inhabitants of Naples have been always very notorious for leading a life of laziness and pleasure, which I take to arise out of the wonderful plenty of their country, that does not make labour so necessary to them, and *partly* out of the temper of their climate, that relaxes the fibres. *Addison on Italy*.

* *PARTNER*. *n. f.* [from *part*.] 1. Partaker; sharer; one who is part in any thing; associate.—

My noble *partner*,

You greet with present grace. *Shak. Macbeth*.
—Those of the race of Sem were no *partners* in the unbelieving work of the tower. *Raleigh*.—

To undergo

Myself the total crime; or to accuse

My other self, the *partner* of my life. *Milton*.

—Sapor, king of Persia, had an heaven of glass, which sitting in his estate, he trod upon, calling himself brother to the sun and moon, and *partner* with the stars. *Peacham*.—The soul continues in her action, till her *partner* is again qualified to bear her company. *Addison*. 2. One who dances with another.—

Lead in your ladies every one; sweet *partner*,
I must not yet forfake you. *Shak. Henry VIII.*

* *To PARTNER*. *v. a.* [from the noun.] To join; to associate with a partner.—

A lady who

So fair, and fash'd to an empy,

Would make the great'st king double to be *partner*'d

With tomboys.

Shakespeare.

(1.) * *PARTNERSHIP*. *n. f.* [from *partner*.]

1. Joint interest or property.—

He does possession keep,

And is too wise to hazard *partnership*. *Dryden*.

2. The union of two or more in the same trade.

—'Tis a necessary rule in alliances, *partnerships*, and all manner of civil dealings, to have a strict regard to the disposition of those we have to do withal. *L'Estrange*.

(II.) *PARTNERSHIP* is a contract among two or more persons, to carry on a certain business, at their joint expence, and share the gain or loss which arises from it. Of this there are four kinds.

1. *PARTNERSHIP IN COMPANIES INCORPORATED BY AUTHORITY*. A royal charter is necessary to enable a company to hold lands, to have a common seal, and enjoy the other privileges of a corporation. A charter is sometimes procured, in order to limit the risk of partners: for, in every private company, the partners are liable for the debts, without limitation; in incorporated societies, they are only liable for their shares in the stock of the society. The incorporation of societies sometimes is authorized by act of parliament; but this high authority is not necessary, unless for conferring exclusive privileges.

2. *PARTNERSHIP IN COMPANIES, WHERE THE BUSINESS IS CONDUCTED BY OFFICERS*. There are many companies of this kind in Britain, chiefly established for purposes which require a larger capital than private merchants can command. The laws with respect to these companies, when not confirmed by public authority, are the same as the following, but the articles of their agreement usually very different. The capital is condescended on, and divided into a certain number of shares, whereof each partner may hold one or more, but is generally restricted to a certain number. Any partner may transfer his share; and the company must admit his assignee as a partner. The death of the partners has no effect on the company. No partner can act personally in the affairs of the company; but the execution of their business is intrusted to officers, for whom they are responsible; and, when the partners are numerous, the superintendency of the officers is committed to directors chosen annually, or at other appointed times, by the partners.

3. *PARTNERSHIP, IN OCCASIONAL JOINT TRADE*, is where two or more merchants agree to employ a certain sum in trade, and divide the gain or loss so soon as the adventure is brought to an issue. This kind of contract being generally private, the parties concerned are not liable for each other. If one of them purchase goods on trust, the furnisher, who grants the credit through confidence in him alone, has no recourse, in case of his insolvency, against the other partners. They are only answerable for the share of the adventure that belongs to the insolvent partner. If it be proposed to carry the adventure farther than originally agreed on, any partner may withdraw his interest; and if it cannot

not be separated from the others, may insist that the whole shall be brought to an issue.

4. **PARTNERSHIP IN STANDING COMPANIES** is generally established by written contract between the parties, where the stock, the firm, the duration, the division of the gain or loss, and other circumstances, are inserted. All the partners are generally authorized to sign by the firm of the company, though this privilege may be confined to some of them by particular agreement. The firm ought only to be subscribed at the place where the copartnery is established. If a partner has occasion, when absent, to write a letter relating to their affairs, he subscribes his own name on account of the company. When the same partners carry on business at different places, they generally choose different firms for each. The signature of each partner is generally sent to new correspondents; and when a partner is admitted, although there be no alteration in the firm, his signature is transmitted, with an intimation of the change in the copartnery to all their correspondents. Houses, that have been long established, often retain the old firm, though all the original partners be dead or withdrawn. No partner is liable to make good the loss arising from his judging wrong in a case where he had authority to act. If he exceeds his power, and the event prove unsuccessful, he must bear the loss; but if it prove successful, the gain belongs to the company: yet if he acquiesces the company immediately of what he has done, they must either acquiesce therein, or leave him the chance of gain, as well as the risk of loss. All debts contracted under the firm of the company are binding on the whole partners, though the money was borrowed by one of them for his private use, without the consent of the rest. And if a partner exceeds his power, the others are nevertheless obliged to implement his engagements; though they may render him responsible for his misbehaviour. Although the sums to be advanced by the partners be limited by the contract, if there be a necessity for raising more money, to answer emergencies or pay the debts of the company, the partners must furnish what is necessary in proportion to their shares. A debt to a company is not cancelled by the private debts of the partner; and when a partner becomes insolvent, the company is not bound for his debts beyond the extent of his share. The debts of the company are preferable, on the company's effects, to the private debts of the partners. Partnership is generally dissolved by the death of a partner; yet, when there are more partners than two, it may, by agreement, subsist among the survivors. Sometimes it is stipulated, that, in case of the death of a partner, his place shall be supplied by his son, or some other person descended on. The contract ought to specify the time and manner in which the surviving partners shall reckon with the executors of the deceased for his share of the stock, and a reasonable time allowed for that purpose. When a partnership is dissolved, there are often outstanding debts that cannot be recovered for a long time, and effects that cannot easily be disposed of. The partnership, though dissolved in other respects, still subsists for the ma-

nagement of their outstanding affairs; and the money arising from them is divided among the partners, or their representatives, when it is recovered. But as this may protract the final settlement of the company's affairs to a very inconvenient length, other methods are sometimes used to bring them to a conclusion, either in consequence of the original contract, or by agreement at the time of dissolution. If a partner withdraws, he continues responsible for his former partners till it be publicly known that he hath done so. A deed of separation, registered at a public office, and announced in the Gazette, is sufficient presumption of such notoriety.

(1.) **PARTON**, [Gael. *i. e.* the *hill top*], a parish of Scotland, in Kirkcudbrightshire, 5 miles square, about 12 miles from the sea. The air is salubrious; the surface hilly; the soil light and sandy; oats, barley, and potatoes are the chief crops. About 400 acres are under oats. It is watered by the Dee, the Ken, and 7 small lakes, abounding with trout. The population in 1790, was 409; increase 13, since 1755: number of horses, 120; sheep, 3000; goats, 60; and black cattle 1000. There are relics of a Druidical circle, and 2 artificial mounts.

(2.) **PARTON**, a village in the above parish, with a church, half a mile from the conflux of the Dee and the Ken.

(3.) **PARTON**, a sea port of England, in Cumberland, 3 miles N. of Whitehaven.

* **PARTOOK**. Preterite of *partake*.

(1.) * **PARTRIDGE**. *n. f.* [*perdrix*, Fr. *pertris*, Welsh; *perdix*, Lat.] A bird of game.—The king is come out to seek a flea, as when one doth hunt a *partridge* in the mountains. 1 Sam. xxvi. 20.

(2.) **PARTRIDGE**, in ornithology. See **TESTRAO**. The places partridges delight in are corn fields, especially whilst the corn grows, for under that cover they shelter and breed; and they are frequented by them when the corn is cut down for the grain. In the furrows, amongst the clots, branches, and long grass, they hide both themselves and coveys, which are sometimes 20 in number, nay 30, in a covey. When winter is arrived, and the stubble fields are ploughed up, or over-soiled with cattle, partridges resort into the upland meadows, and lodge in the dead-grass, or fog under hedges, amongst mole-hills, or under the roots of trees; sometimes they resort to coppices and under-woods, especially if any corn-fields are adjacent, or where there is grown broom, brakes, fern, &c. In harvest, when every field is full of men and cattle, in the day they are found in fallow fields adjoining to corn fields, where they lie lurking till evening or morning, and feed among the sheaves of corn. This bird contributes so much to the pleasures of the table, that many expedients were formerly in use to take them alive. Having deceived the timid creatures by an happy imitation of their notes, it was easy to entice them into the snare; but their destruction is now almost entirely reserved for the murderous shot of the sportsman. The partridges of Abyssinia are said to be as large as *capons*.

PARTRIDGEFIELD, a township of Massachusetts, in Berkshire county; 128 miles W. of Boston; containing 1041 citizens, in 1790.

* **PARTURIENT**.

• **PARTURIENT** *adj.* [*parturiens*, Latin.] About to bring forth.

(1.) • **PARTURITION** *n. f.* [from *parturio*, Latin.] The state of being about to bring forth.—Confirmation of parts is required, not only unto the previous conditions of birth, but also unto the *parturition* or very birth. *Brown*.

(2.) **PARTURITION** is rather the act of bringing forth, or being delivered of young. See *MIDWIFERY*.

(1.) • **PARTY** *n. f.* [*parté*, Fr.] 1. A number of persons confederated by similarity of designs, or opinions in opposition to others; a faction.—When any of these combatants strips his terms of ambiguity, I shall think him a champion for truth, and not the slave of vain glory or a *party*. *Locke*.—This account of *party* patches will appear improbable to those, who live at a distance from the fashionable world. *Addison*.—*Party* writers are so sensible of the secret virtue of an *inimicus*, that they never mention the *q*—*a* at length. *Spectator*.—This *party* rage in women only serves to aggravate animosities that reign among them. *Addison*.—As he never leads the conversation into the violence and rage of *party* disputes, I listened to him with pleasure. *Tatler*.—Division between those of the same party, exposes them to their enemies. *Pope*.—The most violent *party*-men are such, as, in the conduct of their lives, have discovered least sense of religion or morality. *Swift*. 2. One of two litigants.—When you are hearing a matter between *party* and *party*, if pinched with the cholic, you make faces like mumpers, and dismiss the controversy more entangled by your hearing; all the peace you make in their cause, is calling both *parties* knaves. *Shak*.—The cause of both *parties* shall come before the judges. *Exodus* xxii. 9.—If a bishop be a *party* to a suit and excommunicates his adversary; such excommunication shall not bar his adversary from his action. *Sylvest*. 3. One concerned in any affair.—

Free'd and enfranchis'd, not a *party* to
The anger of the king. *Shak*.

I do suspect this trash
To be a *party* in this injury. *Shak*.

4. Side; persons engaged against each other.—
The peace both *parties* want is like to last. *Dryden*.

5. Cause; side.—
Ægle came in, to make their *party* good. *Dryd*.

6. A select assembly.—

I'll have a *party* at the Bedford-head. *Pope*.

—If the clergy would a little study the arts of conversation, they might be welcome at every *party*. *Swift*. 7. Particular person; a person distinct from, or opposed to another.—She was stopped with a number of trees, so thickly placed together, that she was afraid she should, with rustling through, stop the speech of the lamentable *party*. *Sidney*.—The minister of justice may, for publick example, virtuously will the execution of that *party* whose pardon another, for consanguinity's sake, as virtuously may desire. *Hooker*.—If the jury found, that the *party* slain was of English race, it had been adjudged felony. *Davies*.—

Canst thou bring me to the *party*? *Shak*.—The smoke received into the nostrils, causes the *party*

to lie as if he were drunk. *Abbot*.—The imagination of the *party* to be cured is not needful to concur; for it may be done without the knowledge of the *party* wounded. *Bacon*.—There is nothing left to be done by the offended *party*, but to return to charity. *Taylor*.—Though there is a real difference between one man and another, yet the *party*, who has the advantage, usually magnifies the inequality. *Collier*. 8. A detachment of soldiers; as, he commanded the *party* sent thither.

(2.) **PARTY**, *adj.* Of or belonging to a party; joined with a party. The authorities above quoted by Dr JOHNSON, (§ 1, def. 1.) of "*party patches*, *party writers*, *party rage*, and *party disputes*," are plainly examples of the *adjective* noun, and ought not to have been adduced as examples of the *noun substantivum*.

(3.) **PARTY**, in a military sense, (§ 1, def. 8.) a small number of men, horse, or foot, sent upon any kind of duty; as into an enemy's country to pillage, to take prisoners, and to oblige the country to come under contribution. Parties are often sent out to view the roads and ways, get intelligence, seek forage; to reconnoitre, or amuse the enemy upon a march; they are also frequently sent upon the flanks of an army or regiment, to discover the enemy if near, and prevent surprise or ambuscade.

(4.) **PARTY**, in heraldry. See *PARTI*.
• **PARTY-COLOURED**, *adj.* [*party* and *coloured*.] Having diversity of colours.—

The fustome ewes,
Then conceiving, did, in yeaning time,
Fall *party-colour'd* lambs. *Shak. Merch. of Ven*.
—The leopard was valuing himself upon the lustre of his *party-coloured* skin. *L'Estrange*.—

Both girt with gold, and clad in *party-coloured* cloth. *Dryden*.
Constrain'd him in a bird, and made him fly
With *party-colour'd* plumes a chattering pie. *Dryden*.

—I looked with as much pleasure upon the little *party-coloured* assembly, as upon a bed of tulips. *Spectator*.—

Nor is it hard to beautify each mouth
With files of *party colour'd* fruits. *Philips*.
Four knives in garb succinct, a trusty band,
And *party-coloured* troops, a shining train,
Draw forth a combat on the velvet plain. *Pope*.

• **PARTY-JURY** *n. f.* [In law.] A jury in some trials, half foreigners and half natives.

• **PARTY-MAN** *n. f.* [*party* and *man*.] A factious person; an abettor of a party.

• **PARTY-WALL** *n. f.* [*party* and *wall*.] Wall that separates one house from the next.—'Tis an ill custom among bricklayers to work up a whole story of the *party-walls*, before they work up the fronts. *Mox*.

(1.) **PARU**, in ichthyology, a very singular American fish. It is broad, flat, and rounded; not very thick, and usually of about 5 or 6 inches long, and more than 4 broad. It has six fins, one large and long, one on the back, and another on the belly behind the anus; each of these reaches to the tail, and has towards the end a long string or cord, made of a single filament, that on the back fin being longer than that on the belly; behind the gills it has also two fins of two fingers breadth

breadth long and one broad; and two others on the belly, which are very narrow; its head is small, and its mouth elevated and small, and furnished with small teeth; its scales are of a moderate size, and are half black and half yellow, so that the fish appears of a black colour, variegated with yellow half moons; its gills, and the beginning of its fins, are also yellow; and it has, on each side near the head, a yellow spot; it is eatable.

(2.) PARU, in geography, a fort of Brazil, in Para, on the N. banks of the Amazon. Lon. 53. 10. W. Lat. 1. 30. S.

PARVICH, an island near Dalmatia, and one of the best peopled and most considerable of those which are under the jurisdiction of Sebenico. It contains a great number of fishermen, and persons who follow agriculture. It contains many Roman antiquities, which show that it was a Roman station. It seems to be among the number of those islands which Pliny calls *Celaduffæ*, which is supposed to be an inversion of *Seviciates*, which means *ill-founding* or *noisy*. It is not large, but it is extremely fertile. Every product succeeds in perfection there; particularly vines, olives, mulberry trees, and fruits. The aspect of this island is very pleasant at a distance. The name *Parvich* is derived from its being the *first* island met with on going out of the harbour of Sebenico; for the Illyric word *parvi* signifies *first*.

PARVICHIO, an island on the coast of Dalmatia, S. of Velia, one of the Quarnero islands. It has a harbour called *Dubac*.

* PARVIS. *n. f.* [Fr.] A church or church-porch: applied to the mootings or law-disputes among young students in the inns of courts, and also to that disputation at Oxford, called *disputatio in parvis*. *Bailey*.

* PARVITUDE. *n. f.* [from *parvus*, Latin.] Little-ness; minuteness. Not used.—The little ones of *parvitude* cannot reach to the same floor with them. *Glanville*.

* PARVITY. *n. f.* [from *parvus*, Lat.] Little-ness; minuteness. Not used.—What are these, for fineness and *parvity*, to those minute animalcula discovered in pepper-water? *Ray*.

PARULIDES, in surgery, tumours and inflammations of the gums, commonly called *gum boils*. They are to be treated with discutients like other inflammatory tumours.

PARUS, the TITMOUSE, in ornithology, a genus belonging to the order of passeræ. The bill is very entire, covered at the basis with hairs; the tongue is truncated and hairy. There are 14 species; of which the most remarkable are these:

1. PARUS BIARMICUS, the *bearded titmouse*, has a short, strong, and very convex bill, of box colour; the head of a fine grey; the chin and throat white; the middle of the breast flesh-coloured; the sides and thighs of a pale orange; the hind part of the neck and back of orange bay; the tail is two inches and three quarters long; the legs of a deep shining black. The female wants the flesh-colour on the breast, and a triangular tuft of black feathers on each side the bill which adorn the male. They are found in marshy places.

2. PARUS CÆRULEUS, the *blue titmouse*, is a very beautiful bird. The bill is short and dusky; the

crown of the head a fine blue; from the bill to the eyes is a black line; the forehead and cheek, white; the back of a yellowish green; the lower side of the body yellow; the wings and tail blue, the former marked transversely with a white bar; the legs of a lead colour. They frequent gardens; and do great injury to fruit trees, by bruising the tender buds in search of the insects which lie under them. They breed in holes of walls, and lay 12 or 14 eggs.

3. PARUS CANDATUS, the *long-tailed titmouse*, is about 5½ inches long, and 7 inches broad. The bill is black, very thick and convex, differing from all others of this genus. The top of the head, from the bill to the hind part, is white, mixed with a few dark grey feathers: this bed of white, is entirely surrounded with a broad stroke of black; which, rising on each side of the upper mandible, passes over each eye, unites at the hind part of the head, and continues along the middle of the back to the rump. The feathers on each side of this black stroke are of a purplish red, as are those immediately incumbent on the tail. The tail is the longest, in proportion to the bulk, of any British bird, being in length three inches, the form not unlike that of a magpie, consisting of 12 feathers of unequal lengths, the middlemost the longest, those on each side growing gradually shorter. These birds are often seen passing through our gardens, going from one tree to another, as if in their road to some other place, never making any halt. They make their nests with great elegance, of an oval shape, and about eight inches deep, having near the upper end a hole for admission. The external materials are mosses and lichens curiously interwoven with wool. On the inside it is very warmly lined with a thick bed of feathers. The female lays from 10 to 17 eggs. The young follow their parents the whole winter; and, from the slowness of their bodies, and great length of tail, appear, while flying, like as many darts cutting the air. See Plate CCLXVIII.

4. PARUS CRISTATUS, the *crested titmouse*, weighs 13 pennyweight; the bill is black with a spot of the same colour above it; all the upper part of the body grey; the neck and under parts are white, with a faint tincture of red, which is deepest just below the wings. The legs are of a lead colour. It crests its crown feathers into a crest. They inhabit the warm parts of North America; and frequent forest-trees feeding upon insects.

5. PARUS MAJOR, the *great titmouse*, has the head and throat black, the cheeks white, the back green; the belly yellowish green, divided in the middle by a line of black which extends to the vent; the rump a bluish grey, the legs of a lead colour, the toes divided to the very origin, and the back toe very large and strong. This species sometimes visit our gardens; but for the most part inhabit woods where they build in hollow trees, laying about ten eggs. They feed on insects, which they find in the bark of trees. In spring they do a great deal of mischief by picking off the tender buds of the fruit trees. Like woodpeckers they are perpetually running up and down the bodies of trees in quest of food. This species has three cheerful notes, which they begin to utter in February.

6. PARUS,

6. *PARUS PENDULINUS*, the REMIZ, or *small titmouse*. It is often found in Lithuania. Mr Coxe, in his Travels through Poland, gives the following account of this little animal. "The wondrous structure of its pendent nest induced me to give an engraving of both that and the birds themselves. (See Plate 268.) They are the smallest species of titmouse. The head is of a pale bluish ash colour; the fore part of the neck and the breast, tinged with red; the belly white; wings black; back and rump of a yellowish rust colour; quill feathers cinereous, with the exterior sides white; the tail rust-coloured. The male is singularly distinguished from the female by a pair of black pointed whiskers. Its nest is in the shape of a long purse, which it forms with amazing art, by interweaving down, gossamer, and minute fibres, in a close and compact manner, and then lining the inside with down alone, so as to make a snug and warm lodge for its young brood. The entrance is at the side, small, and round, with its edge more strongly marked than the rest of this curious fabric: the bird, attentive to the preservation of its eggs or little ones from noxious animals, suspends it at the lesser end to the extremity of the slender twigs of a willow or some other tree, over a river. Contrary to the custom of titmouse, it lays only four or five eggs: possibly Providence hath ordained this scantiness of eggs to the remiz, because by the singular instinct imparted to it, it is enabled to secure its young much more effectually from destruction, than the other species, which are very prolific."

7. *PARUS VIRGINIANUS*, the *yellow rump*, is found in Virginia; and is distinguished by a yellow spot on its rump. All the rest of the feathers are brown, with a slight tincture of green. They run about the bodies of trees, and feed on insects, which they pick from the crevices of the bark.

PARUTA, Paul, a noble Venetian, born in 1540; distinguished for his learning, and knowledge as a statesman. He filled several high offices; was sent on several embassies; was appointed governor of Brescia, and procurator of St Mark; in all which, he showed great abilities and probity. He wrote, 1. Notes upon Tacitus: 2. Political Discourses: 3. A Treatise of the Perfection of the Political Life: 4. A History of Venice, from 1513 to 1572, with the War of Cyprus; all in Italian. He died in 1598.

PARWAN, a town of Cabul, 63 miles NW. of Cabul.

PARWIS, a town of Tirol, 18 miles WNW. of Inspruck.

PARYSATIS, an infamous Persian Queen, wife of Darius Nothus, and mother of Artaxerxes Mnemon and Cyrus the younger. Her partiality for Cyrus led her to commit the greatest injustice and barbarities; and she poisoned Statira, the wife of Artaxerxes. See PERSIA.

(1.) * PAS. *n. f.* [French.] Precedence; right of going foremost.—When she came into any full assembly, she would not yield the *pas* to the best of them. *Arbutnot.*

(2.) PAS, in geography, a town of France, in the dep. of the Straits of Calais; 6 miles E. of Doullens, and 1¼ SW. of Arras.

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(3.) PAS DE CALAIS, or STRAITS OF CALAIS, See CALAIS, N° 4.; also DOVER, N° 9.

PASAICK, a large river of New Jersey, which rises in Morris county, runs 12 miles SE. then turns NE. and receives a large supply of waters from the rivers Romopack, Kingwood, and Pegunock; then running NE. passes by the town of Patterson, over the Little and Great Falls; after which it runs several miles SE. and S. and falls into Newark bay, where its mouth is 400 yards broad. It is navigable 10 miles, up to the Great Falls, where it is 40 yards broad, and falls over a rock 80 feet perpendicular. There is a bridge over this river 40 feet long.

PASAKAMENITZ, a town of Bohemia, in Chrudim; 8 miles WNW. of Politzka.

PASANGA, an island in the E. Indian Ocean; near the W. coast of Sumatra. Lat. 5. 10. S.

PASARGADA, a town of Persia, near Carmania, founded by Cyrus the Great, on the spot where he conquered Aftayages. The kings of Persia were afterwards crowned in it. *Strabo*, 15. *Plin.* viii. 26. *Herod.* 1. 125.

PASARGADJE, one of the noblest families of ancient Persia. The ACHEMENIDES were a tribe of it.

(1.) PASCAGOOLA, or } a town of West Flo.
(1.) PASCAGOOLA, } rida. Lon. 88. 32.
W. Lat. 30. 30. N.

(2.) PASCAGOULA, a river of Georgia, which runs through W. Florida, passes the above town, to which it gives name, and falls into the Gulf of Mexico, by several mouths, which occupy a space of near 4 miles; which is one continued bed of oyster shells. It is navigable above 150 miles.

(1.) PASCAL, Stephen, a French gentleman, of an ancient family, born in 1588. He was president of the court of aïde in Auvergne; he was a very learned man, an able mathematician, and a friend of Descartes. Having an extraordinary tenderness for his only son, he quitted his office in his province, and went and settled at Paris in 1631, that he might be quite at leisure for the instruction of him; and Blaise never had any master but his father.

(2.) PASCAL, Blaise, one of the greatest geniuses, and best writers France has produced, was born at Clermont in Auvergne, in 1623. From his infancy he gave proofs of a very extraordinary capacity. His father had kept all mathematical books out of his way, lest they should interrupt his study of the languages; but, by intuition alone, he advanced considerably in the knowledge of mathematics, without knowing a tingle term. He understood Euclid's Elements as soon as he cast his eyes upon them. At 16 years of age, he wrote *A Treatise of Conic Sections*, which was accounted, by the most learned, a mighty effort of genius. At 19, he contrived an admirable arithmetical machine, which would have done credit to any man versed in science. About this time his health became impaired, and he was in consequence obliged to suspend his labours for 4 years. In his 23d year, having seen Torricelli's experiment respecting a vacuum and the weight of the air, he turned his thoughts towards these objects; and he published the result of a variety of experiments, in two small treatises, the one

I entitled

entitled, *A Dissertation on the Equilibrium of Liquors*; and the other, *An Essay on the Weight of the Atmosphere*. These labours procured him so much reputation, that the greatest mathematicians and philosophers of the age consulted him about such difficulties as they could not solve. But his career, though brilliant, was ordained to be but short. His health declined so rapidly, that he was obliged to renounce all severe study, and betook himself to devotion, which he carried to such a mistaken degree, as to inflict on himself the most severe tortures. He died at Paris 1662, aged 39 years. Besides the works above mentioned, he wrote *Lettres Provinciales*, satirizing the Jesuits, and some religious pieces. His works were collected by Boffin, in 5 vols. 8vo.

PASCATAQUA. See **PISCATAQUA**.

(1.) * **PASCHAL.** *adj.* [*paschal*, French; *pascalis*, Latin] 1. Relating to the passover. 2. Relating to Easter.

(2.) **PASCHAL.** See **PASSOVER** and **EASTER**.

PASCOMAYO, a sea port town of Peru, in the province of Sana, and bishopric of Truxillo.

PASCUAR, or **PASQUARO**, a town of Mexico, in Mechoacan; 18 miles SW. of Mechoacan.

PAS-EP-A, the chief of the Lamas, particularly eminent for having invented characters for the Moguls. He was much esteemed by the Chinese. There is still at Pekin a *myau* or temple, built in honour of Pas-ep-a in the time of the Mogul emperors. He died in 1279.

PASEWALK, a town of Pomerania, on the Ucker, by which it exports goods; belonging to Prussia. It has iron works, and lies 21 miles W. of Old Stettin, and 66 SSE. of Stralsund. Lon. 51. 43. E. Ferro. Lat. 53. 27. N.

* **PASH.** *n. f.* [*paz*, Spanish, a kiss.] A face. *Hanmer.*—

Thou want'st a rough *pash*. *Shak.*

* **To PASH.** *v. a.* [*perffen*, Dutch.] To strike; to crush.—

I'll *pash* him o'er the face. *Shak.*

Thy cunning engines have with labour rais'd

My heavy hanger, like a mighty weight,

To fall and *pash* thee dead. *Dryden.*

PASIGRAPHY, *n. f.* [from *πασ*, all or whole, and *γραφο*, to write,] “the art of writing on any subject so as to be understood by all nations.” Schemes of **UNIVERSAL CHARACTERS**, to answer this purpose have been propoed by different ingenious men; (See **CHARACTER**, § II. i. N° 5.) but the practicability, of introducing such characters to universal use, is generally doubted. “In France,” (says the learned Dr Gleig,) “where every thing is admired that is new, and every vagary of a pretended philosopher thought practicable, a proposal has been made to introduce one universal language into the world, constructed by a few metaphysicians on the laws of human thought. And to this language, in its written form, is to be given the name of *Pasigraphy*.” (So the Dr spells it.) “Such readers as think this idle dream worthy their attention, (which is far from being the case with us,) will find some ingenious thoughts on the history of a Philosophical Language, in the 2d vol. of *Nicholson's Journal of Natural Philosophy*, &c. *Enc. Brit. Supp.*

PASIPHAE, in fabulous history, daughter of Apollo, by Perseis, and wife of Minos, king of Crete, and mother of the Minotaur. See **DÆDALUS**, N° 1. **MINOS** II, and **MINOTAUR**.

PASITANO, a sea port town of Naples, on the bay of Salerno, a few miles W. of Amalfi; famous for being the birth place of Flavius Bembo, or Gioia, the inventor of the Mariner's Compass. See **BEMBO**, N° 1.

PASITHEA, one of the three **GRACES**.

PASITIGRIS, a name of the **TIGRIS**.

PASKA, a town of Africa, in the kingdom of Fonia, where the king keeps a garison. It is surrounded with 6 rows of palisadoes.

PASMAN, an island near the coast of Dalmatia; 18 miles long, and 3 broad; containing 7 villages, a convent in its centre, and a monastery on its E. point. It abounds with vines and olives, and the people have oil and wine, &c. in plenty.

PASOMDSO, a lake of Thibet, 48 miles in circumference. Lon. 112. 10. E. Ferro. Lat. 29. 42. N.

PASOR, Matthias, a learned German divine of the 17th century, born at Herborne, in Westphalia. He became professor of divinity at Croningen, and afterwards of mathematics at Heidelberg. On the invasion of the Palatinate, he came over to England, and read lectures at Oxford, on Hebrew and mathematics; and was afterwards appointed professor of oriental languages in that university. He died in 1658.

PASPALUM, in botany, a genus of the digynia order, belonging to the triandria class of plants; and in the natural method ranking under the 4th order, *Gramina*.

(1.) **PASPAYA**, a mountainous, but fertile province of Peru in La Plata; abounding in grain and fruit.

(2.) **PASPAYA**, a town in the above province, 120 miles from the city of Plata.

PASQUA, a town of Mexico, in New Galicia, at the mouth of a river, on the N. Pacific Ocean; 25 miles SE. of Cape Corrientes, and 310 W. of Mexico.

PASQUARO. See **PASCUAR**.

PASQUATAQUA. See **PISCATAQUA**.

(1.) * **PASQUE-FLOWER.** *n. f.* [*pulsatilla*, Lat.] A flower. *Mill.*

(2.) **PASQUE-FLOWER.** See **ANEMONE**, § II, III.

PASQUETANK. See **PASQUOTANK**.

(1.) **PASQUIER**, Stephen, a learned French lawyer, poet and historian, born at Paris in 1528. He became an advocate in parliament, afterwards counsellor, and at last advocate general, under Henry III. all of which he filled with abilities and reputation. His works, which were published together, consist of Letters, Inquiries, Poems, Portraits, Epigrams, Epitaphs, &c. His poem, entitled *Puce*, occasioned by his observing a flea on the breast of the learned Catherine De Roches, made no small noise. He died at Paris, Aug. 31. 1615, aged 87.

(2—4.) **PASQUIER**, Theodore, Nicolas, and Guy, sons of the preceding, were also eminent for learning. Theodore was colleague and successor to his father as advocate-general; Guy was auditor

auditor of accounts, and Nicolas was master of requests. He published *Letters*, containing discourses upon the occurrences in France, in the reigns of Henry IV. and Lewis XIII.

PASQUIL. See PASQUINADE, § 1.

PASQUIMANS. See PARQUIMANS.

(1.) PASQUIN, a mutilated statue at Rome, in a corner of the palace of the Urinni. Its takes its name from a cobbler of that city, called *Pasquin*, famous for his sneers and gibes, and who diverted himself by passing his jokes on all that went through that street. After his death, as they were digging up the pavement before his door, they found in the earth the statue of an ancient gladiator, well cut, but maimed and half spoiled: this they set up in the place where it was found, and by common consent named it *Pasquin*. Since that time all satires are attributed to that figure; and are either put into its mouth, or pasted upon it, as if they were written by *Pasquin* redivivus; and these are addressed by *Pasquin* to Marforio, another statue at Rome. When Marforio is attacked, *Pasquin* defends him; and when *Pasquin* is attacked, Marforio afflicts him in his turn; that is, the people make the statues speak just what they please.

(1.) * PASQUIN, PASQUIL. } *n. f.* [from *pas-*

(1.) * PASQUINADE. } *quins*, a statue at Rome, to which they affix any lampoon or paper of satirical observation.] A lampoon.—He never valued any *pasquils* that were dropped up and down. *Howel*.—The *pasquils*, lampoons, and libels, we meet with now-a-days, are a sort of playing with the four and twenty letters, without sense, truth, or wit. *Tatler*.

(2.) A PASQUINADE is a satirical libel fastened to the statue of *Pasquin*: these are commonly short, witty, and pointed; and from hence the term has been applied to all lampoons of the same cast.

(1.) PASQUOTANK, a county of N. Carolina, in Edenton district; bounded on the N. by Camden, E. by Currituck, S. by Albemarle Sound, and W. by Parquimans county. In 1795, it contained 3874 citizens, and 1613 slaves. A county court is held at the court-house the 1st Monday in March, June, September, and December.

(2.) PASQUOTANK, a river of N. Carolina, which rises in Great Dismal Swamp, and running first S. by W. and then S.E. passes Hertford, and falls into Albemarle Sound.

(1.) * PASS. *n. f.* [from the verb.] 1. A narrow entrance; an avenue.—

The straight *pass* was damm'd

With dead men.

Shak.

—It would be easy to defend the *passes* into the whole country, that the king's army should never be able to enter. *Clarendon*.—Truth is a strong hold, and diligence is properly the understanding's laying siege to it; so that it must be perpetually observing all the avenues and *passes* to it. *South*. 2. Passage; road.—The Tyrians had no *pass* to the Red Sea, but through the territory of Solomon. *Raleigh*.—

Pity tempts the *pass*.

Dryden.

3. A permission to go or come any where.—They shall protect all that come in, and send them to the lord deputy, with their safe conduct or *pass*, to be at his disposition. *Spenser*.—

When evil deeds have their permissive *pass*,
And not the punishment. *Shak.*

Give quiet *pass*

Through your dominions. *Shak.*

If ever fate would sign my *pass*, delay

It should be now no more. *Chapman*.

—A gentleman had a *pass* to go beyond the seas.

Clarendon. 4. An order by which vagrants or important persons are sent to their place of abode. 5.

Push; thrust in fencing.—

'Tis dangerous when the baser nature comes
Between the *pass* and fell incensed points

Of mighty opposites. *Shak.*

—The king hath laid, that in a dozen *passes* between you and him, he shall not exceed you three hits. *Shak*.—

With seeming innocence the crowd beguil'd;

But made the desperate *passer*, when he smil'd.

Dryden.

6. State; condition.—To what a *pass* are our minds brought, that, from the right line of virtue, are wryed to these crooked shifts? *Sidney*.—

After King Henry united the roses, they laboured to reduce both English and Irish, which work, to what *pass* and perfection it was brought, in queen Elizabeth's reign, hath been declared. *Davies's State of Ireland*.—

Thou did'st to this *pass*, my affections move.

Chapman.

—I am now brought to such *pass*, that I can see nothing at all. *L'Estrange*.—Matters have been brought to this *pass*, that if one among a man's sons had any blemish, he laid him aside for the ministry. *South*.

(2.) A PASS, in a military sense, is a strait and difficult passage, which shuts up the entrance into a country.

(3.) PASS. See PASSADO, § 2.

(4.) PASS PAROLE, in military affairs, a command given at the head of an army, and thence communicated to the rear, by passing it from mouth to mouth.

(1.) * To PASS. *v. n.* [*passer*, French; *passus*, a step, Latin.] 1. To go; to move from one place to another; to be progressive. Commonly with some particle.—

Tell him his long trouble is *passing*

Out of this world.

Shak.

—If I have found favour in thy sight, *pass* not away from thy servant. *Genesis*.—While my glory *passeth by*, I will put thee in a cleft of the rock, and will cover thee, while I *pass by*. *Exodus xxxiii.*

22.—Thus will I cut off him that *passeth out*, and him that returneth. *Ezekiel xxxv. 7*.—This heap

and this pillar be witnesses, that I will not *pass over* to thee, and that thou shalt not *pass over* it and this pillar unto me for harm. *Genesis xxxi. 52*.—

An idea of motion not *passing on*, is no better than an idea of motion at rest. *Locke*.—

He felt their fleeces as they *pass'd along*. *Pope*.

—If the cause be visible, we stop at the instrument, and seldom *pass on* to him that directed it.

Wake's Prep. for Death. 2. To go; to make a way.—

Her face, her hands were torn

With *passing* through the brakes.

3. To make a change from one thing to another.

—Others, dissatisfied with what they have, and

I 2 not

not trusting to those innocent ways of getting more, fall to others, and *pass* from just to unjust. Temple. 4. To vanish; to be lost.—

Beauty's a charm, but soon the charm will *pass*. Dryden.

5. To be spent; to go away progressively.—The time, when the thing existed, is the idea of that space of duration, which *passed* between some fixed period and the being of that thing. Locke.—One who fixes his thoughts very intently on one thing, so as to take but little notice of the succession of ideas that *pass* in his mind, whilst he is taken up with that earnest contemplation, lets slip out of his account a good part of that duration, and thinks that time shorter than it is. Locke. 6. To be at an end; to be over.—

Eager Romans, ere all rites were *past*,

Did let too soon the sacred eagle fly. Dryden.

7. To die; to pass from the present life to another state.—

The pangs of death do make him grin;

Disturb him not, let him *pass* peaceably. Shak.

8. To be changed by regular gradation.—Inflammations are translated from other parts to the lungs; a pleurisy easily *passeth* into a peripneumony. Arbuthnot. 9. To go beyond bounds. Obsolete.—Why this *passes*, Mr Ford:—you are not to go loose any longer. Shak. 10. To be in any state.—I will cause you to *pass* under the rod. Ezekiel, xx. 37. 11. To be enacted.—Many of the nobility spoke in parliament against those things which were most grateful to his majesty, and which still *passed*. Clarendon.—Neither of these bills have yet *passed* the house of Commons. Swift.

12. To be effected; to exist. Unless this may be thought a noun with the article suppressed, and be explained thus; it came to the *pass* that.—I have heard it required, how it might be brought to *pass* that the church should everywhere have able preachers. Hooker.—When the case required dissimulation, if they use it, it came to *pass* that the former opinion of their good faith made them almost invisible. Bacon. 13. To gain reception; to become current: as, this money will not *pass*.—That trick, said she, will not *pass* twice. Hudibras.—Though frauds may *pass* upon men, they are as open as the light to him that searches the heart. L'Estrange.—Their excellencies will not *pass* for such in the opinion of the learned. Dryden.—False eloquence *passeth* only where true is not understood. Felton.—The grossest suppositions *pass* upon them. Swift. 14. To be practised artfully or successfully.—

This practice hath most shrewdly *pass* upon thee. Shak.

15. To be regarded as good or ill.—This won't *pass* for a fault in him, till 'tis proved one in us. Alsterbury. 16. To occur; to be translated.—If we would judge of the nature of spirits, we must have recourse to our own consciousness of what *passes* within our own mind. Watts. 17. To be done.—Provided that no indirect act *pass* upon them to defile them. Taylor. 18. To heed; to regard. Not in use.—

As for these silken-coated slaves, I *pass* not. Shak.

19. To determine finally; to judge capitally.—

Well we may not *pass* upon his life, Without the form of justice. Shak.

20. To be supremely excellent.—

Sir Hudibras's *passing* worth,

The manner how he sallied forth. Underwood.

21. To thrust; to make a push in fencing.—

To see thee fight, to see thee *pass* thy puncto. Shak.

They lash, they foin, they *pass*, they strive to bore

Their corsets. Dryden.

22. To omit.—

She would not play, yet must not *pass*. Prior.

23. To go through the alimentary duct.—Substances hard cannot be dissolved, but they will *pass*; but such whose tenacity exceeds the powers of digestion, will neither *pass* nor be converted into aliment. Arbuthnot. 24. To be in a tolerable state.—A middling sort of man was left well enough to *pass* by his father. L'Estrange.

25. To *Pass* away. To be lost; to glide off.—

Defining the soul to be a substance that always thinks, can serve but to make many men suspect, that they have no souls at all, since they find a good part of their lives *pass* away without thinking. Locke. 26. To *Pass* away. To vanish.

(2.)* To *Pass*. v. a. 1. To go beyond.—As it is advantageous to a physician to be called to the cure of a declining disease; so it is for a commander to suppress a sedition which has *passed* the height. Hayward. 2. To go through: as, the horse *passed* the river. 3. To spend; to live through.—Were I not assured he was removed to advantage, I should *pass* my time extremely ill without him. Collier.—

You know in what deluding joys we *pass*

The night that was by heav'n decreed our last. Dryden.

—We have examples of such, as *pass* most of their nights without dreaming. Locke.—

The people, free from cares, serene and gay,

Pass all their mild untroubled hours away. Addison.

—A lady, who had *passed* the winter at London with her husband, entered the congregation. Addison. 4. To impart to any thing the power of moving.—Dr Thurston thinks the principal use of inspiration to be, to move, or *pass* the blood from the right to the left ventricle of the heart. Derham. 5. To carry hastily.—I had only time to *pass* my eye over the medals. Addison. 6. To transfer to another proprietor.—

He that will *pass* his land,

As I have mine, may set his hand

And heart unto this deed. Herbert.

7. To strain; to percolate.—They speak of severing wine from water, *passing* it through ivy wood. Bacon. 8. To vent; to pronounce.—How many thousands take upon them to *pass* their censures on the personal actions of others? Watts. —They will commend the work in general, but *pass* for many fly remarks upon it afterwards, as shall destroy all their cold praises. Watts. 9. To utter ceremoniously. Many of the lords, and some of the commons, *passed* some compliments to the two lords. Clarendon. 10. To utter solemnly

lemnly or judiciously.—All this makes it more prudent, rational, and pious, to search our own ways, than to *pass* sentence on other men. *Hammond*.—He *pass* his promise, and was as good as his word. *L'Estrange*. 11. To transmit; to procure to go.—Waller *pass*ed over 5000 horse and foot by Newbridge. *Clarendon*. 12. To put an end to.—

This night

We'll *pass* the business privately.

Shak.

13. To surpass; to excel.—

She, more sweet than any bird on bough,

Would oftentimes amongst them bear a part,

And strive to *pass*, as she could well enough,

Their native musick by her skilful art. *Spenser*.

—Whom dost thou *pass* in beauty? *Ezekiel* xxxii.

19.—

In my royal subject I *pass* thee. *B. Jonson*.

The ancestor and all his heirs,

Though they in number *pass* the stars of heav'n,

Are still but one.

Davies.

14. To omit; to neglect; whether to do or to mention.—

If you fondly *pass* your proffer'd offer,

'Tis not the rounder of your old fac'd walls

Can hide you.

Shak.

Please you that I may *pass* this doing. *Shak.*

I *pass* the wars that spotted lynxes make

With their fierce rivals.

Dryden.

I *pass* their warlike pomp, their proud array.

Dryden.

15. To transcend; to transgress.—They did *pass* those bounds, and did return since that time.

Burnet. 16. To admit; to allow.—The money of every one that *pass*eth the account, let the priests take. 2 *Kings* xii. 4.—

I'll *pass* them all upon account. *Hudibras*.

17. To enact a law.—How does that man know, but the decree may be already *pass*ed against him? *South*.—

Among the laws that *pass*'d, it was decreed,

That conquer'd Thebes from bondage should be freed.

Dryden.

—Could the same parliament which address'd with so much zeal and earnestness against this evil, *pass* it into a law? *Swift*.—His majesty's ministers propos'd the good of the nation, when they advis'd the *pass*ing this patent. *Swift*. 18. To impose fraudulently.—

Th' indulgent mother did her care employ,

And *pass*'d it on her husband for a boy.

Dryden.

19. To practise artfully; to make succeed.—

After that discovery there is no *pass*ing the same trick upon the mice. *L'Estrange*. 20. To send from one place to another: 35, *pass* that beggar to his own parish. 21. To *pass* away. To spend; to waste.—The father waketh for the daughter, lest she *pass* away the flower of her age.

Ecclesi. xlii. 9. 22. To *pass* by. To excuse; to forgive.—God may *pass* by single sinners in this world. *Tillotson*. 23. To *pass* by. To neglect; to disregard.—How far ought this enterprize to wait upon these other matters, to be mingled with them, or to *pass* by them? *Bacon*.—It conduces much to our content, if we *pass* by those things which happen to our trouble. *Taylor*.—

Certain passages of Scripture we cannot, without

injury to truth, *pass* by here in silence. *Burnet*.

24. To *pass* over.—To omit; to let go unregarded.—

Better to *pass* him o'er, than to relate

The cause I have your mighty sire to hate.

Dryden.

—It does not belong to this place to have that point debated, nor will it hinder our pursuit to *pass* it over in silence. *Watts*.—The poet *passes* it over as hastily as he can. *Dryden*.—The queen ask'd him who he was; but he *passes* over this without any reply. *Broom*.

PASSA, a town of Persia, in Farsistan.

* PASSABLE. *adj.* [*passible*, Fr. from *pass*.]

1. Possible to be passed or travelled through or over.—His body is a *passable* carcase, if he be not hurt. *Shak*.—Antiochus departed in all haste, weening in his pride to make the land navigable, and the sea *passable* by foot. 2 *Mac*. 2. Supportable; tolerable; allowable.—They are crafty, and of a *passable* reach of understanding. *Howell*.—

Lay by Virgil; my version will appear a *passable* beauty when the original muse is absent. *Dryden*.

—White and red, well mingled on the face, make what was before but *passable* appear beautiful.

Dryden. 3. Capable of admission or reception.—In counterfeits, it is with men as with false money; one piece is more or less *passable* than another.

L'Estrange.—Could they have made the slander *passable*, we should have heard farther. *Collier*.

4. Popular; well received. This is a sense less usual.—Where there is no eminent odds in sufficiency, it is better to take with the more *passable*, than with the more able. *Bacon*.—A man of the one faction, which is most *passable* with the other, commonly giveth best way. *Bacon*.

PASSACAILLE. See MUSIC, § 252.

(1.) PASSADE, in fencing. See PASSADO.

(2.) PASSADE, *n. f.* in the manege, is a turn or courie of a horse backwards or forwards on the same spot of ground. Hence there are several sorts of passades, according to the different ways of turning, in order to part or return upon the same tread, which is called *closing the passade*; as the passade of one time, the passade of five times, and the raised or high passades, into which the demivolts are made into curvets. See HORSEMANSHIP.

(1.) * PASSADO. *n. f.* [Italian.] A push; a thrust.—A duellist, a gentleman of the very first house; ah! the mortal *passado*. *Shak*.

(2.) PASSADO, PASS, or PASSADE, in fencing, an advance or leap forward upon the enemy. Of these there are several kinds; as passes within, above, beneath, to the right, the left, and passes under the line, &c. The measure of the pass is when the swords are so near as that they may touch one another.

(1.) * PASSAGE. *n. f.* [*passage*, French.] 1. Act of passing; travel; courie; journey.—The story of such a *passage* was true. *Raleigh*.—

So shalt thou best prepar'd endure

Thy mortal *passage* when it comes. *Milton*.

—All have liberty to take fish, which they do by standing in the water by the holes, and so intercepting their *passage*, take great plenty of them.

Brown.—Live like those who look upon themselves as being only on their *passage* through this

state.

state. *Asterbury*.—Though the *passage* be troublesome, yet it is secure. *Wake*.—

In souls prepar'd, the *passage* is a breath
From time t' eternity, from life to death.

Harte.

2. Road; way.—That seemeth the best course, which hath most *passages* out of it. *Bacon*.—The land enterprize of Panama was grounded upon a false account, that the *passages* towards it were no better fortified than Drake had left them.

Bacon.—

Is there yet no other way besides
These painful *passages*, how we may come
To death, and mix with our connatural dust?

Milton.

Against which open'd from beneath
A *passage* down to th' earth, a *passage* wide.

Milton.

—To bleed to death was one of the most desirable *passages* out of this world. *Felt*.—When the *passage* is open, land will be turned most to great cattle; when shut, to sheep. *Temple*.—The Persian army had advanced into the straight *passages* of Cilicia.

South.—

The *passage* made by many a winding way,
Reach'd e'en the room in which the tyrant lay.

Dryden.

He plies him with redoubled strokes;
Wheels as he wheels; and with his pointed
dart

Explores the nearest *passage* to his heart.

Dryden.

—The genius told me there was no *passage* to them, except through the gates of death. *Addison*.—I have often stopp'd all the *passages*, to prevent the ants going to their own nest. *Addison*.—When the gravel is separated from the kidney, oily substances relax the *passages*. *Arbuthnot*. 3. Entrance or exit; liberty to pass.—

What, are my doors oppos'd against my *passage*?
Shak.

Make my *passage* free
For lov'd Dulichius, *Chapman*.

4. The state of decay. Not in use.—

Would some part of my young years
Might but redeem the *passage* of your age!

Shak.

5. Intellectual admittance; mental acceptance.—I expect it will have a fairer *passage* than among those deeply imbued with other principles. *Digby*.

6. Occurrence; hap.—

It is no act of common *passage*, but

A strain of rareness. *Shak*.

7. Unfetter'd state; aptness by condition or nature to change the place of abode.—Traders in Ireland are but factors; the cause must be rather an ill opinion of security than of gain; the last entices the poorer traders, young beginners, or those of *passage*; but without the first, the rich will never settle in the country. *Temple*.—

A bird of *passage*! lost as soon as found.

Pope.

8. Incident; transaction.—This business, as it is a very high *passage* of state, so it is worthy of serious consideration. *Hayward*.—

Thou doest in thy *passages* of life

Make me believe that thou art only mark'd
For the hot vengeance of heav'n. *Shak*.

9. Management; conduct.—Upon consideration of the conduct and *passage* of affairs in former times, the state of England ought to be cleared of an imputation cast upon it. *Davies*. 10. Part of a book; single place in a writing. *Endroit*, Fr.—A critic who has no taste nor learning, seldom ventures to praise any *passage* in an author who has not been before well received by the publick. *Addison*.—As to the cantos, all the *passages* are as fabulous as the vision at the beginning. *Pope*.—

How commentators each dark *passage* shun,
And hold their farthing candle to the sun!

Young.

(2.) *PASSAGE*, FORT, a town and fort of Jamaica, between Port-Royal and Spanish Town, 7 miles SE. of the latter, at the mouth of the Cobre. It has a brisk trade, and about 400 houses.

(3.) *PASSAGE*, GREAT, one of the VIRGIN islands, 7 miles long and 2 broad; 12 miles E. of Porto Rico.

(4.) *PASSAGE*, LITTLE, another of the Virgin islands, near the above.

(5.) *PASSAGE*, NORTH-EAST. See NORTH-EAST, § 3.

(6.) *PASSAGE*, NORTH-WEST. See NORTH-WEST, § 3.

(7.) *PASSAGE*, RIGHT OF, in commerce, is a duty exacted by some princes, either by land or sea, in certain close and narrow places in their territories, on all vessels and carriages, and even sometimes on persons or passengers, coming in or going out of ports, &c. The most celebrated *passage* of this kind in Europe is the Sound; the dues for passing which first belong to the king of Denmark, and are paid at Elsinore or Cronenburg.

PASSAGES, a sea-port town of Spain, in Guipulcoa, with a good harbour, sheltered by mountains; 3 miles E. of St Sebastian, and 60 E. of Bilbao. In 1719, it was taken by the French. Lon. 2 4. W. Lat. 43. 21. N.

PASSAIS, a town of Franco, in the department of the Orne; 6 miles SW. of Domfront.

PASSAIX. See *PASSAICK*.

PASSAMAN, a town of Sumatra, on the W. coast, near the equator.

PASSAMAQUODDY, a town of the United States, in Maine, Washington county, on a bay so named at the mouth of the Santa Croix; 378 miles from Boston, and 726 from Philadelphia.

PASSANT, *part. adj.* in heraldry, a term applied to a lion or other animal in a shield, appearing to walk leisurely: for most beasts, except lions, the *trippant* is frequently used instead of *passant*.

PASSAO, a cape of Peru, under the equator. Lon. 78. 50. W.

PASSARA, a town of Borneo, on the W. coast; 80 miles SW. of Borneo.

PASSARAT. See *PASSERAT*.

(1.) *PASSARO*, a town of Sicily, in the Valley of Noto; 13 miles SW. of Noto, and 30 S. of Syracuse.

(2.) *PASSARO*, a cape of Greece, in Janna, between the Gulfs of Armira and Zeton.

(1.) *PASSARON*, in ancient geography, a town of Epirus, where, after sacrificing to Jupiter, the kings swore to govern according to law, and the people to obey and defend the country.

(2.) *PASSARON*,

(2.) **PASSARON**, a town of European Turkey, in the Morea; 18 miles S. of Argos.

PASSAROWAN. See **PASSARUAN**.

PASSAROWITZ, a town of European Turkey in Servia, near the Moravia; famous for being the scene of a peace made in 1718, between Charles VI and Achmet III. It lies 33 miles ESE. of Belgrade, and 44 W. of Orsova.

(1.) **PASSARUAN**, or ? a kingdom of the E. In-

(1.) **PASSARVAN**, } dies in the isle of Java.

(2.) **PASSARVAN**, the capital of the above kingdom, lies on the N. coast of the isle of Java, 40 miles W. of Panaruan. Its chief trade is in cotton. Lon. 114. 15. E. Lat. 7. 0. S.

(1.) **PASSAU**, a ci-devant bishopric and principality of Germany, in the circle of Bavaria, lying between Lower Bavaria, Austria, and Bohemia; about 20 miles long. It is now secularized, and under the complete controul of France, though we know not to what sovereign or state it is nominally attached.

(2.) **PASSAU**, an ancient, handsome, and celebrated city of Germany, capital of the above territory, is seated on the Danube, at its conflux with the Inn and the Ilz, where it has a fort. It consists of 3 towns, besides the suburbs, which has an old castle. These towns are, 1. **PASSAU PROPER**, between the Danube and the Inn; 2. **INN-STADT**; and 3. **Ilzstadt** or **ILSTADT**. See these articles. The houses are well built and the cathedral is reckoned the finest in Germany. Where it is not surrounded by water, it is fortified by walls, ramparts, and ditches. It was under the power of the Romans till A. D. 475, when it was taken by the Alemanni; after which it fell under the dominion of the Franks, and then under the dukes of Bavaria. Otho III. made it a bishopric in 999. It is famous for the treaty, called the *religious peace*, made in 1552. It lies 82 miles ENE. of Munich, and 120 E. of Vienna. Lon. 13. 34. E. Lat. 48. 26. N.

PASSAVANT, 3 towns of France: 1. in the dep. of the Doubs, 4 miles S. of Baume, and 13½ ENE. of Besançon; 2. in that of Marne, 6 miles S. of St Mencheould; 3. in that of Mayne and Loire, 6 miles ESE. of Vihiers, and 15 SW. of Saumur.

* **PASSED**. Preterite and participle of *pass*.—Why sayest thou my judgment is *passed* over from my God? *Isaiab* xl. 27.—He affirmed, that no good law *passed* since king William's accession, except the act for preserving the game. *Addison*.—The description of a life *passed* away in vanity and among the shadows of pomp, may be soon finely drawn in the same place. *Addison*.

PASSENBERG, a town of Istria, 9 miles NNE. of Pedenra.

(1.) * **PASSENGER**. *n. f.* [*passager*, French.] 1. A traveller; one who is upon the road; a wayfarer.—

All the way, the wanton damsel found
New mirth, her *passenger* to entertain. *Spenser*.

My mate, that make their wills their law,
Have some unhappy *passenger* in chafe. *Shak*.

The nodding horror of whose shady brows
Threats the forlorn and wand'ring *passenger*.

Milton.

—Apelles, when he had finished any work, ex-

posed it to the sight of all *passengers*, and concealed himself to hear the censure of his faults. *Dryden*.

2. One who hires in any vehicle the liberty of travelling.—The diligent pilot in a dangerous tempest doth not attend to the unskillful words of a *passenger*. *Sidney*.

(2.) * **PASSENGER**. *falcon. n. f.* A kind of migratory hawk. *Ainsworth*.

PASSENHEIM, a town of Prussia in Oberland, built in the 14th century. It has often suffered by fire, war, and pestilence. It is 70 miles S. of Konigsberg.

PASSEPIED. See **MUSIC**, § 252.

(1.) * **PASSER**. *n. f.* [from *pass*.] One who passes; one that is upon the road.—Under you ride the home and foreign shipping in so near a distance, that, without troubling the *passer*, or borrowing Stentor's voice, you may confer with any in the town. *Carew*.—

Like a matron, butcher'd by her sons,
And cast beside some common way, a spectacle
Of horror and affright to *passers* by,
Our groaning country bled at every vein.

Rouse.

(2.) **PASSER**, in geography, a river of Germany, which runs into the Adige, near Metan in Tirol.

PASSERAT, John, a celebrated professor of eloquence in the royal college of Paris, and one of the polittest writers of his time, was born at Troyes, in Champagne, in 1534. He studied the law under the famous Cujacius at Bourges, where he became professor of eloquence in 1572. He was an indefatigable student, yet to an extraordinary erudition he joined an uncommon politeness of manners and pleasantry. He gained the esteem of Charles IX. Henry III. and all the men of wit and learning in his time. He died in 1602, and left several admired works behind him.

PASSERES, an order of birds, in the class *Aves*. See **ORNITHOLOGY**, and **ZOOLOGY**.

(1.) **PASSERI**, John Baptist, a learned antiquary and philologist, born at Gubio in Urbino, in 1694. Having entered into orders, he became apostolic protonotary and vicar general of Pesara. He published many books, particularly *Pittura Etruscorum in Vaseulis, nunc primum in unum collectæ, explicationibus et dissertationibus illustratæ*. Rome, 1767, 3 tom. fol. Being overturned in his carriage, he received a bruise of which he died in 1780.

(2.) **PASSERI**, John Baptist, a painter and poet of Italy, born in 1609. He was a disciple of Dominichino, but had more merit as an author than as a painter. He wrote the *Lives of the Painters, Sculptors and Architects*, of his own time. He died at Rome, in 1679, aged 70.

(3.) **PASSERI**, Joseph, nephew of the preceding, under whom he studied, afterwards became the disciple of Charles Maratti. He chiefly excelled in portraits. He died in 1714, aged 60.

PASSERINA, in botany, **SPARROW-WORT**, a genus of the monogynia order, belonging to the octandria class of plants; and in the natural method ranking under the 31st order *Peperculæ*.

PASSERINE ORDER. See **ORNITHOLOGY**.

PASSERO, CAPE, a cape of Sicily, anciently called *Pachinus*, the most southerly point of the island. It is not a peninsula, but a barren island about

about a mile round, separated from Sicily by a strait half a mile broad. It has a fort to protect the adjacent country from the Barbary pirates. In 1735, admiral Sir George Byng defeated a Spanish squadron off this cape. Lon. 15. 12. E. Lat. 36. 35. N.

PASSEROE, a river of Prussia, which runs into the Frisch-haff, below Braunberg.

* **PASSIBILITY.** *n. f.* [*passibilité*, Fr. from *passible*.] Quality of receiving impressions from external agents.—The last doubt, touching the *possibility* of the matter of the heavens, is drawn from the eclipses of the sun and moon. *Hakevill.*

* **PASSIBLE.** *adj.* [*passible*, Fr. *passibilis*, Lat.] Susceptive of impressions from external agents.—Theodore disputeth that God cannot be said to suffer; but he thereby meaneth Christ's divine nature against Apollinarius, which held even deity itself *passible*. *Hooker.*

* **PASSIBLENESS.** *n. f.* [from *passible*.] Quality of receiving impressions from external agents.—It drew after it the heresy of the *possibleness* of the deity. *Brerewood.*

PASSIENUS, Paulus, a Roman knight nephew of the poet Propertius, whose elegiac poetry he imitated. He also attempted Lyric poetry with success, in which he followed Horace. *Plin. ep.* 6, 9.

PASSIFLORA, the PASSION-FLOWER; a genus of the pentandria order, belonging to the gynandria class of plants; and in the natural method ranking under the 34th order, *Cucurbitaceae*. The calyx is pentaphyllous; there are 5 petals; the nectarium a crown; the berry is pedicellated. There are near 30 different species; all natives of warm foreign countries, only one of which is sufficiently hardy to succeed well in the open ground here; all the others requiring the shelter of a green-house or stove, but chiefly the latter. The most remarkable are,

1. **PASSIFLORA CÆRULEA**, the blue-rayed common palmed passion-flower, hath long, slender, shrubby, purplish-green stalks, branchy, and ascending, upon support by their clasps, 30 or 40 feet high; with one large palmated leaf at each joint, and at the axillas large spreading flowers, with whitish-green petals, and a blue radiated nectarium; succeeded by a large, oval, yellowish fruit. It flowers from July, until October; the flowers are very large, conspicuous, and their composition is exceedingly curious and beautiful. They come out at the axillas on pedunculi about three inches long, which they terminate, each flower having, just close under the calyx, a three-lobed involucre-like appendage; a five lobed calyx, and a five-petalous corolla, the size, figure, and colour of the calyx, &c. the petals arranging alternately with the calicinal lobes; the whole, including the involucre, calyx, and corolla, make just 13 lobes and petals, all expanded flat: and within the corolla is the nectarium, composed of a multitude of thread-like fibres, of a blue and purple colour, disposed in circular rays round the column of the fructification; the outer ray is the longest, flat, and spreading on the petals; the inner is short, erect, and narrows towards the centre: in the middle is an erect cylindric club-shaped column or pillar, crowned with the round-

ish germen, having at its base five horizontal spreading filaments, crowned with incumbent yellow anthers, and that move about every way; and from the side of the germen arise three slender spreading styles, terminated by headed stigmas: the green afterwards gradually becomes a large oval fleshy fruit, ripening to a yellowish colour.—These wonderful flowers are only of one day's duration, generally opening about 11 or 12 o'clock, and frequently in hot sunny weather burst open with elasticity, and continue fully expanded all that day; and the next they gradually close, assuming a decayed-like appearance, and never open any more: the evening puts a period to their existence, but they are succeeded by new ones daily on the same plant.—This plant and flowers are held in great veneration in some foreign Catholic countries, where the religious make the leaves, tendrils, and different parts of the flower, to represent the instruments of our blessed Saviour's passion; hence the name *passiflora*.

2. **PASSIFLORA INCARNATA**, the incarnated, or flesh-coloured, Italian passion flower, hath a strong perennial root; slender, herbaceous stalks, rising, upon support, four or five feet high; leaves composed of three sawed lobes, each leaf attended by a twining tendril; and at the axillas long slender pedunculi, terminated each by one whitish flower, having a greenish calyx, and a reddish or purple radiated nectarium, surrounding the column of the fructification, which succeed to a large, round, fleshy fruit, ripening to a beautiful orange colour.—The flowers of this species are also very beautiful, though of short duration, opening in the morning, and night puts a period to their beauty; but they are succeeded by a daily supply of new ones.—The fruit of this sort is also very ornamental, as ripening to a fine reddish orange colour; but these rarely attain perfection here, unless the plants are placed in the stove; therefore, when there is such accommodation, it highly merits that indulgence, where it will exhibit both flowers and green and ripe fruit; all at the same time in a beautiful manner.

3. **PASSIFLORA VESPERTILIO** the bat's-wing passion flower, hath slender, striated, branchy stalks; large, bilobate, or two-lobed leaves, the base roundish and glandular, the lobes acute, widely divaricated like a bat's wings, and dotted underneath; and axillary flowers, having white petals and rays. The leaves of this species have a singular appearance, the two lobes being expanded six or seven inches wide, resembling the wings of a bat upon flight; hence the name *vespertilio*.—All the species in this country are of a tender quality, except the first, which succeeds very well in the full ground, in a warm situation; only their young branches are sometimes killed in very severe winters; but plenty of new ones generally rise again in spring following: the others denominated *stove kinds*, must always be retained in that repository.

PASSIGNANO, or } a town of Italy, in the
PASSIGNIANO } pope's dominions, and
province of Perugia, on the N. coast of the lake
Perugia; 8 miles SE. of Cortona, and 22 NW. of
Perugia. Lon. 12. 5. E. Lat. 43. 16. N.

PASSIGRAPHY. See **PASIGRAPHY**.

PASSINELLI, Laurence, an eminent historical painter,

painter, born in 1619, at Bologna; in which city there are some of his capital pieces. He died in 1700, aged 71.

* **PASSING.** *participial adj.* [from *pass*.] 1. Superlative; surpassing others; eminent.—

No strength of arms shall win this noble fort,
Or shake this puissant wall; such *passing* might
Have spells and charms, if they be said aright.

Fairfax.

2. It is used adverbially to enforce the meaning of another word. Exceeding.—

Oberon is *passing* fell and wroth.

Shak.

Passing many know it.

Chapman.

Many in each region *passing* fair.

Milton.

She was not only *passing* fair,

But was withal discreet and debonaire.

Dryden.

We learnt our liege was *passing* well.

Gay.

* **PASSINGBELL.** *n. f.* [*passing* and *bell*.] The bell which rings at the hour of departure, to obtain prayers for the passing soul: it is often used for the bell which rings immediately after death.

Prayers ascend

To heaven in troops at a good man's *passingbell*.

Donne.

A talk of tumult, and a breath

Would serve him as his *passingbell* to death.

Daniel.

Before the *passingbell* begun,

The news thro' half the town has run.

Swift.

(1.) * **PASSION.** *n. f.* [*passion*, Fr. *passio*, Latin.]

1. Any effect caused by external agency.—A body at rest affords us no idea of any active power to move, and when set in motion, it is rather a *passion* than an action in it. *Locke.* 2. Susceptibility of effect from external action.—The differences of mouldable and not mouldable, scissible and not scissible, and many other *passions* of matter are plebeian motions. *Bacon.* 3. Violent commotion of the mind.—

All the other *passions* fleet to air.

Shak.

Every *passion* fully strives

To make itself in thee fair and admired.

Shak.

I am doubtful, lest

You break into some merry *passion*.

Shak.

In loving thou do'st well, in *passion* not:

Wherein true love consists not.

Milton.

Cruel his eye, but cast

Signs of remorse and *passion*, to behold

The fellows of his crime condemn'd.

Milton.

Passion's too fierce to be in fetters bound.

—All the art of rhetoric, besides order and perspicuity, only moves the *passions*, and thereby misleads the judgment. *Locke.* 4. Anger.—The word *passion* signifies the receiving any action in a large philosophical sense; in a more limited philosophical sense, it signifies any of the affections of human nature; as love, fear, joy, sorrow; but the common people confine it only to anger. *Watts.*

5. Zeal; ardour.—Where statesmen are ruled by faction and interest, they can have no *passion* for the glory of their country. *Addison.* 6. Love.—

You kill'd her father: you confess'd you drew
A mighty argument to prove your *passion* for the daughter.

Dryden and Lee's Oedipus.

He, to grate me more,

Publicly own'd his *passion* for Amestris.

Rowe.

Think what a *passion* such a form must have.

Granville.

7. Eagernefs.—Abate a little of that violent *passion* for fine clothes, so predominant in your sex. *Swift.* 8. Emphatically, the last suffering of the Redeemer of the world.—He shewed himself alive after his *passion*, by many infallible proofs. *Acts* i. 3.

(2.) **PASSION** is a word, of which, as Dr Reid observes, the meaning is not precisely ascertained, either in common discourse or in the writings of philosophers. In its original import, it denotes every *feeling* of the mind occasioned by an extrinsic cause; but it is generally used to signify some *agitation* of mind, opposed to that state of tranquillity in which a man is most master of himself. That it was thus used by the Greeks and Romans, is evident from Cicero's rendering *passio*, the word by which the philosophers of Greece expressed it, by *perturbatio* in Latin. In this sense of the word, *passion* cannot be itself a *distinct* and *independent* principle of action; but only an occasional degree of vehemence given to those dispositions, desires, and affections, which are at all times present to the mind of man; and that this is its proper sense, we need no other proof, than that *passion* has always been conceived to bear analogy to a storm at sea, or to a tempest in the air. With respect to the number of *passions* of which the mind is susceptible, different opinions have been held by different authors. Le Brun, a French writer on painting, justly considering the expression of the *passions* as a very important as well as difficult branch of his art, has enumerated no fewer than twenty, of which the signs may be expressed by the pencil on canvass. See *DRAWING*, *Scd.* XI; *Plates* CXIX. and CXX.) That there are so many different states of mind producing different effects which are visible on the features and the gestures, and that those features and gestures ought to be diligently studied by the artist, are truths which cannot be denied; but it is absurd to consider all these different states of mind as *passions*, since *tranquillity* is one of them, which is the reverse of *passion*.

(3.) **PASSIONS AND EMOTIONS, DIFFERENCE BETWEEN.** See *EMOTION*, § 2.

(4.) **PASSIONS, CONTROVERSY RESPECTING THE ORIGIN OF THE.** A question of considerable importance in the philosophy of the human mind, has been discussed at no small length, by several eminent authors, whether the different *passions* be each a degree of an original and innate disposition, distinct from those dispositions which are respectively the foundations of the other *passions*, or only different modifications of one or two general dispositions common to the whole race? The former opinion is held by all who build their system of metaphysics upon a number of distinct internal senses; and the latter by those, who, with Locke and Hartley, resolve what is commonly called *instinct* into an early association of ideas. (See *INSTINCT* and *METAPHYSICS*.) This question also involves in it the arguments respecting the disinterestedness of our most benevolent *passions*. But as it would swell this article beyond all due bounds to give even an abridged view of the arguments on both sides, we shall refer the reader to the writings of Messrs Locke and Hartley, Lord Kames, Reid's Inquiry into the Human Mind, and Dr Sayer's Disquisitions Metaphysical

and Literary, where they will find the question amply discussed.

(5.) **PASSIONS, EXTERNAL SIGNS OF.** See **PHYSIOGNOMY**.

(6.) **PASSIONS**, in medicine, are ranked among the non-naturals. Joy, anger, and fear, are the principal; but all of them, when violent, produce very sensible effects on the health. There are more instances on record of people being killed by sudden joy than by sudden grief.

(7.) **PASSIONS**, in painting, are the external expressions of the different dispositions of the mind; particularly by their effects on the features. See **DRAWING**, *See* X. and XI; and *Plates* 119 and 120: and **PAINTING**, *See* VIII.

* **To PASSION. v. n.** [*passioner*, Fr. from the noun.] To be extremely agitated; to express great commotion of mind. Obsolete.—

* *Twas Ariadne passioning*

For Theseus' perjury and unjust flight. *Shak.*

* **PASSIONATE. adj.** [*passioni*, Fr.] 1. Moved by passion; feeling or expressing great commotion of mind.—Follow the light of sound and sincere judgment, without either cloud of prejudice or mist of *passionate* affection. *Honker*.—Thucydides observes, that men are much more *passionate* for injustice than for violence. *Clarend.*—In his prayers, as his attention was fixt and steady, so was it inflamed with *passionate* fervors. *Fell*.—Good angels looked upon this ship of Noah's with a *passionate* concern for its safety. *Burnet*.—Men, upon the near approach of death, have been roused up into such a lively sense of their guilt, such a *passionate* degree of concern and remorse, that, if ten thousand ghosts had appeared to them, they scarce could have had a fuller conviction of their danger. *Atterbury*. 2. Easily moved to anger.—Homer's Achilles is haughty and *passionate*, impatient of any restraint. *Prior*.

* **To PASSIONATE. v. a.** [from *passion*.] An old word. Obsolete. 1. To affect with passion.—

Great pleasure mix'd with pitiful regard,

That godly king and queen did *passionate*.

Whilst they his pitiful adventures heard. *Spens.*

2. To express passionately.—

Thy niece and I want hands,

And cannot *passionate* our tenfold grief. *Shak.*

* **PASSIONATELY. adv.** [from *passionate*.] 1. With passion; with desire, love or hatred; with great commotion of mind.—Whoever *passionately* covets any thing he has not, has lost his hold. *J. Esrange*.—If sorrow expresses itself never so loudly and *passionately*, and discharges itself in never so many tears, yet it will no more purge a man's heart, than the washing of his hands can cleanse the rottenness of his bones. *South*.—I made Melituda, in opposition to Nourmahal, a woman *passionately* loving of her husband. *Dryden*. 2. Angrily.—They lay the blame on the poor little ones, sometimes *passionately* enough, to divert it from themselves. *Locke*.

* **PASSIONATENESS. n. f.** [from *passionate*.] 1. State of being subject to passion. 2. Vehemence of mind.—To love with some *passionateness* the person you would marry, is not only allowable but expedient. *Boyle*.

PASSIONEI, Dominic, a learned Roman cardinal, born of an illustrious family, at Fossombrone

in Urbino, in 1682. He was educated at the Clementine college in Rome, where he formed a rich library with a collection of rare MSS. He went to Paris in 1706, where he was much respected by the literati, particularly by Montfaucon. He was employed in various negotiations. He was at the congress at Utrecht in 1712; at Basil in 1714; and at Soleure in 1715; of which he published an account, entitled *Acta Legationis Helveticæ*. He was made Abp. of Ephesus, by Innocent III, and pronounced the funeral oration on Prince Eugene. He died in 1761; and was a great patron of men of letters.

(1.) * **PASSION-FLOWER. n. f.** [*grandilla*, Lat.] A flower. *Miller*.

(2.) **PASSION-FLOWER.** See **PASSIFLORA**.

(1.) * **PASSION-WEEK. n. f.** The week immediately preceding Easter, named in commemoration of our Saviour's crucifixion.

(2.) **PASSION-WEEK.** The Thursday of this week is called *Maunday Thursday*; the Friday, *Good Friday*; and the Saturday, the *Great Sabbath*.

(1.) * **PASSIVE. adj.** [*passif*, Fr. *passivus*, Lat.] 1. Receiving impression from some external agent.

High above the ground

Their march was, and the *passive* air upon

Their nimble tread. *Milton*.

—The active information of the intellect, filling the *passive* reception of the will, grew actuate into a third and distinct perfection of practice. *South*.

—As the mind is wholly *passive* in the reception of all its simple ideas, so it exerts several acts of its own, whereby, out of its simple ideas, the other is formed. *Locke*.—The *vis inertiae* is a *passive* principle by which bodies persist in their motion or rest, receive motion in proportion to the force impressing it, and resist as much as they are resisted. *Newton's Optics*. 2. Unresisting; not opposing.—

Not those alone, who *passive* own her laws,

But who, weak rebels, more advance her cause. *Pope*.

3. Suffering; not acting. 4. [In grammar.] A verb *passive* is that which signifies passion or the effect of action; as *docor*, I am taught. *Clark's Lat. Gr.*

(2.) **PASSIVE OBEDIENCE**, the duty enjoined by the scriptures of submission to the powers that be. The absurdity which commonly attaches to the phrase *passive obedience* originates from the mistaken loyalty of the adherents of the house of Stuart, who, to aggravate the illegality of the revolution, were wont to represent James II. as supreme over both houses of parliament, and of course over all law. We shall only observe, that there is a great difference between *active* and *passive* obedience; and that many who consider themselves as bound on no account whatever to *resist* the supreme power, would yet *suffer death* rather than do an immoral action in obedience to any law of earthly origin.

(3.) **PASSIVE PRAYER**, among the *mytic divines*, is a total suspension or ligature of the intellectual faculties; in virtue whereof, the soul remains of itself, and as to its own power, impotent with regard to the producing of any effects. The *passive* state, according to Fenelon, is only *passive* in the same sense as contemplation is, i. e. it does not exclude peaceable, disinterested acts, but only unquiet ones, or such as tend to our own interest.

In

In the passive state, the soul has not properly any activity, any sensation, of its own: it is a mere infinite flexibility of the soul, to which the feeblest impulse of grace gives motion.

(4.) PASSIVE TITLE, in Scots law. See LAW, Part III, Chap. II, Sect. XX, § 21—36.

(5.) PASSIVE VERB, in grammar, the verb or word that expresses suffering, or the effect of action, which, in the learned languages, has a peculiar termination; as *amor, doceor*, &c. in Latin; that is an *r* is added to the active *amo, doceo*: and, in the Greek, the inflection is made by changing *ο* into *ομαι*; as *τυχομαι, τυγχωμαι*, &c. But, in the modern languages, the passive inflection is performed by auxiliary verbs, joined to the participle of the past tense; as, *I am praised*, in Latin *laudo*, and in Greek *παριστοιμαι*; or, *I am loved*, in Latin *amor*, and in Greek *φιλομαι*. Thus it appears, that the auxiliary verb *am*, serves to form the passives of English verbs: and the same holds of the French; as *Je suis loué, I am praised*; *j' ai été loué, I have been praised*, &c. See GRAMMAR, under ENGLISH LANGUAGE, particularly p. 692.

* PASSIVELY. *adv.* [from *passive*.] 1. With a passive nature.—

Tho' some are *passively* inclin'd,

The greater part degenerate from their kind.

Dryden.

2. Without agency.—A man may not only *passively* and involuntarily be rejected, but also may, by an act of his own, cast out or reject himself. *Pearson.*

* PASSIVENESS. *n. f.* [from *passive*.] 1. Quality of receiving impression from external agents. 2. Passibility; power of suffering.—We shall lose our *passiveness* with our being, and be incapable of suffering as heaven can make us. *Decay of Piety.* 3. Patience; calmness.—Gravity and *passiveness* in children is not from diffidence, but phlegm. *Fell.*

* PASSIVITY. *n. f.* [from *passive*.] Passiveness. An innovated word.—There being no mean between penetrability and impenetrability, between *passivity* and activity, these being contrary and opposite, the infinite rarefaction of the one quality is the position of its contrary. *Cheyne's Phil. Prin.*

(1.) PASSO, or } a town in Dalmatia, in the
PASSO DI HAN, } territory of Sign, seated on
the Cetina, on the site of the ancient town of
Æquum.

(2.) PASSO DI MOIA, a town of Naples, in the province of Capitanata; 17 miles WSW. of Viesta.

PASSOLA, and } two species of dried grapes.

PASSOLINA, } See LIPARI, N° 2.

(1.) * PASSOVER. *n. f.* [*pass* and *over*.] 1. A feast instituted among the Jews in memory of the time when God, smiting the first born of the Egyptians, *passed over* the habitations of the Hebrews.—The Jews *passover* was at hand, and Jesus went up. *John ii. 13.*—The Lord's *passover*, commonly called Easter, was ordered by the common law to be celebrated every year on a Sunday. *Ayliffe.* 2. The sacrifice killed.—Take a lamb and kill the *passover*. *Exodus. xii. 21.*

(2.) The PASSOVER was called *pascha* by the old Greeks and Romans; not we presume from *πασχω, I suffer*, as Chrysostom, Irenæus, and Tertullian, suppose, but from the Hebrew word *pasaph, passage, leap*. The institution of this solemn festival, the reason of it, the alteration of

the Hebrew calendar, and its other consequences, with all the peculiar ceremonies observed in the celebration of it, are particularly related in the xiiith chap. of Exodus. With regard to the bread, see BREAD, § 13. The obligation of keeping the passover was so strict, that whoever neglected to do it, was condemned to death. (Numb. ix. 13.) But those who had any lawful impediment, as a journey, sickness, or any uncleanness, voluntary or involuntary: those that had been present at a funeral, or by any other accident had been defiled, were to defer the celebration of the passover till the 2d month of the ecclesiastical year, or to the 14th day of the month Jiar, which answers to April and May. (See 2 Chr. xxx. 1, 2, &c.) The modern Jews observe in general the same ceremonies that were practised by their ancestors, in the celebration of the passover. On the 14th of Nisan, the first-born fast in memory of God's smiting the first-born of the Egyptians. The morning prayers are the same with those said on other festivals. They take the roll of the pentateuch out of the chest, and read as far as the end of the 12th chapter of Exodus, and what is contained in the 18th chapter of Numbers, relating to the passover. The matron of the family then spreads a table, and sets on it two unleavened cakes, and two pieces of the lamb, a shoulder boiled and another roasted. To this they add some small fishes, because of the levathan; a hard egg, because of the ziz: some meal, because of the behemoth, (these three animals being appointed for the feast of the elect in the other life); and peas and nuts for the children, to provoke their curiosity to ask the reason of this ceremony. They likewise used a kind of mustard, which has the appearance of mortar, to represent their making bricks in Egypt. The father of the family sits down with his children and slaves, because on this day all are free. He takes bitter herbs, and dips them in the mustard, then eats them, and distributes to the rest. Then they eat of the lamb, the institution of which is at that time recited by the master of the family. The whole repast is attended with hymns and prayers. They pray for the prince under whose dominion they live, according to Jeremiah's advice. (xxix. 7. See FEAST, § III, N° iv. The same things are repeated the two following days; and the festival is concluded by the ceremony *habdala*. (See HABDALA.) This ceremony is performed at the closing of the Sabbath-day, when the master of the house pronounces certain benedictions, accompanied with certain formalities, requesting that every thing may succeed well the week following. After going out of the synagogue, they then eat leavened bread for the last time. (See of Modena, p. iiii. c. 3. and the Rabbins.) While the temple was standing, they brought their lambs thither, and sacrificed them, offering the blood to the priest, who poured it out at the foot of the altar. The passover was typically predictive of Christ (1 Cor. v. 7.) Many erroneously imagine, that the passover was instituted in memory of the Israelites passing the Red Sea; though it is certain the feast was held, and had its name, before the Israelites took a step of their way out of Egypt, and consequently several days before their passing

the Red Sea. Besides the passover celebrated on the 14th of the first month, there was a second passover held on the 15th of the 2d month after the equinox, instituted by God in favour of travellers and sick persons, who could not attend at the first, nor be at Jerusalem on the day. The Greeks, and even some of the catholic doctors, from the 13th, 18th, and 19th chapters of St John, conclude that Jesus anticipated the day marked for the passover in the law; but the authority of three evangelists seems to evince the contrary. See Whitby's Dissertation on this subject, in an appendix to the fourteenth chapter of St Mark. F. Lamy supposes that our Lord did not attend at the passover the last year of his life; which sentiment has drawn upon him abundance of opposers. F. Hardouin asserts, that the Galileans celebrated the passover on one day, and the Jews on another.

(1.) * PASSPORT. *n. f.* [*passport*, Fr.] Permission of passage.—Fain she would have given a secret *passport* to her affection. *Sidney*.—

Giving his reason *passport* for to pass
Whither it would. *Sidney*.
Let him depart; his *passport* shall be made. *Shak*.

—Having used extreme caution in granting *passports* to Ireland, he conceived that paper not to have been delivered. *Clar*.—The gospel has then only a free admission into the assent of the understanding, when it brings a *passport* from a rightly disposed will. *South*.—

He shows the *passport* which he brought along;

His *passport* is his innocence and grace. *Dryden*.
At our meeting in another world;

For thou hast drunk thy *passport* out of this. *Dryden*.
Fortune for a *passport* gave him wealth. *Harte*.

(2.) A PASSPORT, or PASS, is a licence or writing obtained from a government granting permission and a safe conduct to pass through the country without molestation: Also a permission granted by any state to navigate in some particular sea, without molestation. It contains the name of the vessel, and that of the master, together with her tonnage and the number of her crew, certifying that she belongs to the subjects of a particular state, and requiring all persons at peace with that state to suffer her to proceed on her voyage without interruption. The violation of *passports* expressly granted by the king, or by his ambassadors, to the subjects of a foreign power in time of mutual war, or committing acts of hostility against such as are in amity, league, or truce with us, who are here under a general implied safe conduct, are breaches of the public faith, without which there can be no intercourse or commerce between one nation and another; and such offences may, according to the writers upon the law of nations, be a proper ground of a national war. And it is enacted by stat. 31 Hen. VI. c. 4. still in force, that if any of the king's subjects attempt or offend upon the sea, or in any port within the king's obedience, or against any stranger in amity, league, or truce, or under safe-conduct, and especially by attacking his person, or spoiling him, or robbing him of his goods; the

lord-chancellor, with any of the Justices of either the king's bench or common pleas, may cause full restitution and amends to be made to the party injured. Pasquier says, that *passport* was introduced for *pass par tout*. Balzac mentions a very honourable *passport* given by an emperor to a philosopher in these terms: "If there be any one on land or sea hardy enough to molest Potamon, let him consider whether he be strong enough to wage war with Cæsar."

(3.) PASSPORT is used likewise for a licence granted by a prince for the importing or exporting merchandizes, moveables, &c. without paying the duties. Merchants procure such *passports* for certain kinds of commodities; and they are always given to ambassadors and ministers for their baggage, equipage, &c.

(4.) PASSPORT is also a licence obtained for the importing or exporting of merchandizes deemed contraband, and declared such by tariffs, &c. as gold, silver, precious stones, ammunition of war, horses, corn, wool, &c. upon paying duties.

PASSUMPSICK, a river of Vermont, which rises in Orange County, runs 34 miles S. and then turns SE. and falls into the Connecticut.

PASSUS, among the ancient Romans, a measure of length, being about four feet ten inches, or the 1000th part of a Roman mile. The word properly signifies the space betwixt the feet of a man walking at an ordinary rate. See MEASURE, N° VII, § 5, iv.

PASSY, a town of France, in the department of Paris, and district of St Denis, near Paris.

PASSYUNK, a township of Pennsylvania, in Philadelphia country.

(1.) * PAST. *participial adj.* [from *pass*.] x. Not present; not to come.—

Past, and to come, seem best; things present worst. *Shak*.

—For several months *past*, papers have been written upon the best political principle, the love of our country. *Swift*.—

This not alone has shone on ages *past*,
But lights the present, and shall warm the last. *Pope*.

2. Spent; gone through; undergone.—
A life of glorious labours *past*. *Pope*.

(2.) * PAST. *n. f.* Elliptically used for *past time*.—

The *past* is all by death possest. *Fenton*.

(3.) * PAST, *preposition*. 1. Beyond the time.—
Sarah was delivered of a child, when she was *past* age. *Heb*. xi. 11. 2. No longer capable of.—
Fervent prayers he made, when he was esteemed *past* sense. *Hayward*.—

Past hope of conquest, 'twas his latest care,
Like falling Cæsar, decently to die. *Dryden*.—

—Many men have not yet finned themselves *past* all sense or feeling, but have some regrets. *Calamy*.
3. Beyond; out of reach of.—

We must not
Prostitute our *past*-cure malady. *Shak*.

What's gone, and what's *past* help,
Should be *past* grief. *Shak*.

—That France and Spain were taught the use of shipping by the Greeks and Phœnicians is a thing *past* questioning. *Hylyn*.—Love, when once *past* government, is consequently *past* shame. *L'Estr*.—
Her

Her life she might have had ; but the despair
Of saving his, had put it *past* her care. *Dryden.*

I'm stupify'd with sorrow, *past* relief. *Dryden.*

—That the bare receiving a sum should sink a
man into a servile state, is *past* my comprehension.

Collier.—That he means paternal power, is *past*

doubt. *Locke.* 4. Beyond ; further than.—We will
go by the king's highway, until we be *past* thy

borders. *Numbers* xxi. 22. 5. Above ; more than.

—The northern Irish Scots have bows not *past*
three quarters of a yard long. *Spenser.*—The same
inundation was not deep, not *past* forty foot from
the ground. *Bacon.*

PASTARO, a town of Italy, in the dep. of the
Lario, district and late duchy of Como, seated on
the E. bank of Lake Como, W. of Introbio.

(1.) * PASTE. *n. f.* [*paste*, French.] 1. Any
thing mixed up so as to be viscous and tenacious :
such as flour and water for bread or pies ; or va-
rious kinds of earth mingled for the potter.—Ex-
cept you could bray Christendom in a mortar, and
mould it into a new *paste*, there is no possibility
of an holy war. *Bacon.*—

With particles of heavenly fire

The God of nature did his soul inspire ;

Which wise Prometheus temper'd into *paste*,

And, mixt with living streams, the godlike image
cast. *Dryden.*

When the gods moulded up the *paste* of man,
Some of the dough was left upon their hands.

Dryden.

—He has the whitest hand that ever you saw, and
raises *paste* better than any woman. *Speator.*

2. Flour and water boiled together so as to make
a cement. 3. Artificial mixture, in imitation of
precious stones.

(2.) PASTE, in cookery, a soft composition of
flour, wrought up with proper fluids, as water,
milk, or the like, to serve for cakes or coffins,
therein to bake meats, fruits, &c. It is the basis
or foundation of pyes, tarts, patties, pasties, and
other works of pastry. It is also used in confec-
tionary, &c. for a preparation of some fruit,
made by beating the pulp thereof with some fluid
or other admixture, into a soft pappy consistence,
spreading it into a dish, and drying it with sugar,
till it becomes as pliable as an ordinary paste. It
is used occasionally also for making the crusts and
bottoms of pyes, &c. Thus, with proper admix-
tures, are made almond pastes, apple pastes, apri-
cot pastes, cherry, currant, lemon, plum, peach,
and pear pastes.

(3.) PASTE is likewise used for a preparation of
wheaten flour, boiled up and incorporated with
water, used by various artificers, as upholsterers,
saddlers, bookbinders, &c. instead of glue or size,
to fasten or cement their cloth, leathers, papers,
&c. When paste is used by bookbinders, or for
paper hangings to rooms, they mix a 4th, 5th, or
6th of the weight of the flour of powdered resin ;
and where it is wanted still more tenacious, gum
arabic or any kind of size may be added. Paste
may be preserved, by dissolving a little sublimate,
in the proportion of a dram to a quart, in the
water employed for making it, which will prevent
not only rats and mice, but any other kind of ver-
min, and insects, from preying upon it.

(4.) PASTES, in the glass trade, or the imitation

or counterfeiting of GEMS in glass, is an art of
considerable importance. GEMS made of pastes
are no way inferior to the native stones, when
carefully made and well polished, in brightness or
transparence, but want their hardness.

(5.) PASTES, GENERAL RULES FOR MAKING.

These are, 1. That all the vessels in which they
are made be firmly luted, and the lute left to dry
before they are put into the fire. 2. That such

vessels be chosen for the work as will bear the fire
well. 3. That the powder be prepared on a por-
phyry stone ; not in a metal mortar, which would

communicate a tinge to them. 4. That the just
proportion in the quantity of the several ingre-
dients be nicely observed. 5. That the materials

be all well mixed ; and, if not sufficiently baked
the first time, be committed to the fire again,
without breaking the pot ; for if this be not ob-
served, they will be full of blisters and air blad-

ders. 6. That a small vacuity be always left at
the top of the pot, to give room to the swelling
of the ingredients. To make paste of extreme

hardness, and capable of all the colours of the
gems, with great lustre and beauty,—Take of

prepared crystal 10 lb., salt of pulverine 6 lb.,
sulphur of lead 2 lb.; mix all these well into a

fine powder : make the whole with common wa-
ter into a hard paste, and make this paste into

small cakes of about 3 oz. each, with a hole in
their middle ; dry them in the sun, and afterwards

calcine them in the strictest part of a potter's fur-
nace. After this, powder them, and levigate

them to a perfect fineness on a porphyry stone,
and set this powder in pots in a glass furnace to

purify for 3 days ; then cast the whole into wa-
ter, and afterwards return it into the furnace,

where let it stand 25 days, in which time all foul-
ness and blisters will disappear, and the paste will

greatly resemble the natural jewels. To give this
the colour of the emerald, add to it brags thrice

calcined ; for a sea-green, brags simply calcined to
a redness ; for a sapphire, add zaffer, with man-
ganese ; and for a topaz, manganese and tartar.

All the gems are thus imitated in this, by the
same way of working as the making of coloured

glasses ; and this is so hard, that they very much
approach the natural gems. The colour of all

the counterfeit gems made of the several pastes
may be made deeper or lighter according to the

work for which the stones are designed ; and it is
a necessary general rule, that small stones for rings,

&c. require a deeper colour, and large ones a
paler. Besides the colours made from manganese,

verdegis, and zaffer, which are the ingredients
commonly used, there are other very fine ones

which care and skill may prepare. A very fine red
may be made from gold, and one not much infe-
rior to that from iron ; a very fine green from

brags or copper ; a sky-colour from silver, and a
much finer one from the granates of Bohemia.

An excellent way of making the paste to imitate
the coloured gems is this : Take a quantity of

sugar of lead ; set it in sand, in a glass body well
luted from the neck downwards ; leave the mouth

of the glass open, and continue the fire 24 hours ;
then take out the salt, and if it be not red but

yellowish, powder it fine, and return it into the
vessel, and keep it in the sand heat 24 hours more.

till it becomes as red as cinnabar. The fire must not be made so strong as to melt it, for then all the process is spoiled. Pour distilled vinegar on this calcined salt, and separate the solution from the dregs; let the decanted liquor stand six days in an earthen vessel, to give time for the finer sediment to subside; filter this liquor, and evaporate it in a glass body, and there will remain a most pure salt of lead; dry this well, then dissolve it in fair water; let the solution stand six days in a glazed pan; let it subside, then filter the clear solution, and evaporate it to a yet more pure white and sweet salt; repeat this operation three times; put the now perfectly pure salt into a glass vessel, set it in a sand heat for several days, and it will be calcined to a fine impalpable powder of a lively red. Take all the ingredients as in the common composition of the pastes of the several colours, only, instead of red lead, use this powder; and the produce will well reward the trouble of the operation. A paste proper for receiving colours may be readily made by pounding and mixing 6 lb. of white sand cleaned, 3 lb. of red lead, 2 lb. of purified pearl-ashes, and 1 lb. of nitre. A softer paste may be made in the same manner, of 6 lb. of white sand cleaned; red lead, and purified pearl-ashes, of each 3 lb.; 1 lb. of nitre, half a pound of borax, and 3 oz. of arsenic. For common use, a pound of common salt may be substituted for the borax. This glass will be very soft, and will not bear much wear if employed for rings, buckles, or such imitations of stones as are exposed to much rubbing; but for ear-rings, ornaments worn on the breast, and those little used, it may last a considerable time.

(6.) PASTES, METHOD OF COLOURING. To give pastes different colours, the process is as follows.—For *Amethyst*. Take 10 lb. of either of the compositions described under GLASS-MAKING, *See* XIV. one ounce and a half of manganese, and one dram of zaffer; powder and fuse them together. *Black*. Take 10 lb. of either of the compositions just referred to, one ounce of zaffer; 6 drams of manganese, and 3 dr. of iron highly calcined; and proceed as before. *Blue*. Take of the same composition 10 lb., of zaffer 6 dr., and of manganese 2 dr.; and proceed as with the foregoing. *Chrysolite*. Take of either of the compositions for paste above described, prepared without saltpetre, 10 lb., and of calcined iron 5 drams; and pursue the same process as with the rest. *Red Cornelian*. Take of the compositions mentioned under GLASS-MAKING, *See* XIV. 2 lb., of glass of antimony 1 lb., of the calcined vitriol called *scarlet ochre* 2 lb., and of manganese one dram. Fuse the glass of antimony and manganese with the composition; then powder them, and mix them with the other, by grinding them together, and fuse them with a gentle heat. *White Cornelian*. Take of the composition just referred to 2 lb., of yellow ochre well washed 2 drams, and of calcined bones 1 oz. Mix them, and fuse them with a gentle heat. *Diamond*. Take of the white sand 6 lb., of red lead 4 lb., of pearl-ashes purified 3 lb., of nitre 2 lb., of arsenic 5 oz., and of manganese one scruple. Powder and fuse them. *Eagle marine*. Take 10 lb. of the composition under GLASS-MAKING, 3 oz. of copper highly cal-

cined with sulphur, and one scruple of zaffer. Proceed as before. *Emerald*. Take of the same composition with the last 9 lb., 3 oz. of copper precipitated from aquafortis, and 2 drams of precipitated iron. *See* GLASS-MAKING, *See* XIV. § 13. *Garnet*. Take 2 lb. of the composition under GLASS-MAKING, 2 lb. of the glass of antimony, and 2 drams of manganese. For vinegar garnet, take of the composition for paste, above described in § 5, two pounds; one pound of glass of antimony, and half an ounce of iron, highly calcined; mix the iron with the uncoloured paste, and fuse them; then add the glass of antimony powdered, and continue them in the heat till the whole is incorporated. *Gold, or full yellow*. Take of the composition for paste, 10 lb., and 1½ oz. of iron strongly calcined; proceeding as with the others. *See* also GLASS-MAKING, *See* XIV. § 12. *Deep purple*. Take of either of the compositions for paste 10 lb., of manganese one ounce, and of zaffer half an ounce. *Ruby*. Take 1 lb. of either of the compositions for paste, and 2 drams of precipitation of gold by tin; powder the paste, and grind the calx of gold with it in a glass, flint, or agate mortar, and then fuse them together. A cheaper ruby paste may be made with half a pound of either of the above compositions, half a pound of glass of antimony, and one dram and a half of the calx of gold; proceeding as before. *See* GLASS-MAKING, *See* XIV. § 18. *Sapphire*. Take of the composition for paste 10 lb., of zaffer 3 drams and 1 scruple, and of the calx *Cassii* 1 dram. Powder and fuse them. Or the same may be done, by mixing with the paste ½ of its weight of smalt. *Topaz*. Take of the compositions under GLASS-MAKING (*See* XIV. § 20.) 10 lb. omitting the saltpetre; and an equal quantity of the *Gold-coloured hard GLASS*. Powder and fuse them. *Turquoise*. Take of the composition for blue paste already described 10 lb., of calcined bone, horn, or ivory, half a pound. Powder and fuse them. *Opaque white*. Take of the composition for paste 10 lb. and 1 lb. of calcined horn, ivory, or bone; and proceed as before. *Semitransparent white, like opal*. *See* GLASS-MAKING, *See* XIV. § 15.

(7.) PASTES, METHOD OF MAKING, IN THE FORM OF DOUBLETES. Let the crystal or glass be first cut by the lapidaries in the manner of a brilliant, except that, in this case, the figure must be composed from two separate stones, or parts of stones, formed in the manner of the upper and under parts of a brilliant, if it was divided in an horizontal direction, a little lower than the middle. After the two plates of the intended stone are thus cut, and fitted so exactly that no division can appear when they are laid together, the upper part must be polished ready for setting; and then the colour must be put between the two plates by this method. Take of Venice or Cyprus turpentine two scruples; and add to it one scruple of the grains of mastich chosen perfectly pure, free from foulness, and previously powdered. Melt them together in a small silver or brass spoon ladle, or other vessel, and put to them gradually any of the coloured substances below mentioned, being first well powdered; stirring them together as the colour is put in, that they may be

be thoroughly commixed. Warm then the doublets to the same degree of heat as the melted mixture; and paint the upper surface of the lower part, and put the upper one instantly upon it, pressing them to each other, but taking care that they may be conjoined in the most perfectly even manner. When the cement or paint is quite cold and set, the redundant part of it, which has been pressed out of the joint of the two pieces, should be gently scraped off the side, till there be no appearance of any colour on the outside of the doublets; and they should then be skilfully set; observing to carry the mounting over the joint, that the upper piece may be well secured from separating from the under one. The colour of the **RUBY** may be best imitated, by mixing a fourth part of carmine with some of the finest crimson lake that can be procured. The **SAPPHIRE** may be counterfeited by very bright Prussian blue, mixed with a little of the above mentioned crimson lake, to give it a cast of the purple. The Prussian blue should not be very deep-coloured, or but little of it should be used: for otherwise, it will give a black shade that will be injurious to the lustre of the doublets. The **EMERALD** may be counterfeited by distilled verdigris, with a little powdered aloes. But the mixture should not be strongly heated, nor kept long over the fire after the verdigris is added: for the colour will be soon impaired by it. The resemblance of the **GARNET** may be made by dragon's blood; which, if it cannot be procured of sufficient brightness, may be helped by a very small quantity of carmine. The **AMETHYST** may be imitated by the mixture of some Prussian blue with the crimson lake; but the proportions can only be well regulated by direction, as different parcels of the lake and Prussian blue vary extremely in the degree of strength of the colour. The yellow **TOPAZES** may be counterfeited by mixing the powdered aloes with a little dragon's blood, or by good Spanish annatto; but the colour must be very sparingly used, or the tinge will be too strong for the appearance of that stone. The **CHRYSOLITE**, hyacinth, vinegar garnet, eagle marine, and other such weaker or more diluted colours, may be formed in the same manner, by lessening the proportions of the colours, or by compounding them together correspondently to the hue of the stone to be imitated; to which end it is proper to have an original stone, or an exact imitation of one, at hand when the mixture is made, in order to the more certain adapting the colours to the effect desired: and when these precautions are taken, and the operation well conducted, it is practicable to bring the doublets to so near a resemblance of the true stones, that even the best judges cannot distinguish them, when well set, without a peculiar manner of inspection; viz. by beholding them betwixt the eye and light, in such position, that the light may pass through the upper part and corners of the stone; when it will easily be perceived that there is no colour in the body of the stone.

(8.) **PASTES**, **M. FONTANIEU'S METHOD OF MAKING THE BASES OF**. **M. Fontanieu** of the Royal Academy of Sciences at Paris, proposed the following processes, which were approved. Although

the different calces of lead are all adapted to produce the same effect in vitrification; yet **M. Fontanieu** prefers lead in scales, and next to that minium, as being the most constantly pure. Sift through a silk sieve the preparations of lead to be used in the vitrification, to separate the groffer parts; as also the lead in a metallic state when white lead in scales is employed. The base of facitious gems is calx of lead and rock-crystal. Pure sand, flint, and the transparent pebbles of rivers, are substances equally fit to make glass; but as it is first necessary to break masses of crystal, stones, or pebbles, into smaller parts; so by this operation particles of iron or copper are frequently introduced, and to these dust or greasy matters are also apt to adhere. Our author therefore begins by putting the pounded crystal or pebbles into a crucible, which he places in a degree of heat capable of making the mass red-hot; he then pours it into a wooden bowl filled with very clear water; and shaking the bowl from time to time, the small portions of coals furnished by the extraneous bodies swim on the surface of the water, and the vitrifiable earth, with the iron, &c. rests on the bottom. He then decants the water; and having dried the mass, pounds it, sifts the powder through the finest silk sieve; then digests the powder 4 or 5 hours with muriatic acid, shaking the mixture every hour. After having decanted the acid from the vitrifiable earth, he washes the latter until the water no longer reddens the tincture of turnsol. The earth, being dried, is passed through a silk sieve, and is then fit for use. Nitre, salt of tartar, and borax, are the three species of salts that enter with quartz and the calces of lead into **M. Fontanieu's** vitrifications. The success depends much on the accurate proportion of the substances made use of to form the crystal which serves as a base. After having tried a great variety of receipts, our author recommends the following: 1. Take two parts and a half of lead in scales, one part and a half of rock-crystal or prepared flints, half a part of nitre, as much borax, and a quarter part of glass of arsenic. These being well pulverized and mixed together are put into a Hessian crucible, and submitted to the fire. When the mixture is well melted, pour it into cold water; then melt it again a 2d and a 3d time; taking care after each melting to throw it into fresh cold water, and to separate from it the lead that may be revived. The same crucible should not be used a 2d time, as the glass of lead is apt to penetrate it, and lose the contents. Cover the crucible well, to prevent any coals getting into it, which would spoil the composition. 2. Take two parts and a half of white ceruse, one part of prepared flints, half a part of salt of tartar, and a quarter part of calcined borax: melt the mixture in a Hessian crucible, and then pour it into cold water; then melt it again, and wash it a 2d and a 3d time, the same precautions being observed. 3. Take two parts minium, one part rock-crystal, half a part of nitre, and as much salt of tartar: this mixture being melted, must be treated as the former. 4. Take three parts of calcined borax, one part of prepared rock-crystal, and one part of salt of tartar; these being well mixed and melted together, must be poured into warm water; the water being decanted

cented and the mafs dried, an equal quantity of minium muft be added to it; it is then to be melted and washed feveral times as directed above. 5. That called by our author the *Mayence bafe*, and which he confiders as one of the fineft cryftalline compositions hitherto known, is thus compofed: Take three parts of fixed alkali of tartar, 1 part of rock-cryftal or flint pulverized: the mixture to be well baked together, and then left to cool. It is afterwards poured into a crucible of hot water to difsolve the fritt; the folution of the fritt is then received into a ftone-ware pan, and aquafortis added gradually till it no longer effervesces: this water being decanted, the fritt muft be washed in warm water till it has no longer any tafte: the fritt is then dried, and mixed with one part and a half of fine cerufe or white lead in fcales; and this mixture muft be well levigated with a little diftilled water. To one part and a half of this powder dried add an ounce of calcined borax: let the whole be well mixed in a marble mortar, then melted and poured into cold water. Thefe fufions and lotions having been repeated, and the mixture dried and powdered, a 12th part of nitre muft be added, and then melted for the laft time; when a very fine cryftal will be found in the crucible. 6. For very fine white ftones: take 8 oz. of cerufe, 3 oz. of rock-cryftal pulverized, 2 oz. of borax finely powdered, and half a grain of manganefe; having melted and washed this mixture as above, it produces a very fine white cryftal.

(9.) PASTES, M. FONTANIEU'S PROCESS FOR COLOURING. On the preparation of the calces of metals depends the vividnefs of the colours. *a*, From Gold. To obtain the mineral purple named *precipitate of Caffius*: 1. Difolve fome pure gold in aqua regia, prepared with 3 parts of precipitated nitrous acid and one part of muriatic acid; to haften the difolution, the matrafs fhould be placed in a fand-bath. Into this pour a folution of tin in aqua regia. The mixture becomes turbid, and the gold is precipitated with a portion of the tin, in the form of a reddifh powder; which, after being washed and dried, is called *precipitate of Caffius*.—The aqua regia employed to difolve the tin is compofed of 5 parts nitrous acid and one part of muriatic acid: to 8 oz. of this aqua regia are added 16 oz. of diftilled water. Some leaves of Malacca tin, about the fize and thicknefs of a fipence, are then put into this diluted aqua regia, till it will difsolve no more of them: which operation requires commonly 12 or 14 days; though it might be haftened by beating the tin ftil thinner, and then rolling it into the form of a hollow cylinder, or turning it round into fpiral convolutions. To prepare more readily the precipitate of Caffius, M. Fontanieu puts into a large jug eight ounces of folution of tin, to which he adds four pints of diftilled water; he afterwards pours into this metallic lye fome folution of gold, drop by drop, taking care to fir the whole with a glafs tube: when the mixture becomes of a deep purple colour, he ceafes dropping the folution of gold; and to haften the precipitation of the mineral purple, pours into the mixture a pint of frefh urine. Six or feven hours after, the precipitation is collected at the bottom of the vefel: the fluid is then decanted;

and the precipitate, washed once or twice, is dried till it becomes a brown powder. 2. Pour into a vefel of fine tin with a thick bottom 4 oz. of the folution of gold; three minutes after add two pints of diftilled water. Let this mixture ftand in the tin vefel 7 hours, taking care to fir it every hour with a glafs tube; afterwards pour it into a conical glafs jug, and add to it a pint of new urine; the mineral purple is foon precipitated, and then is to be washed and dried. 3. Diftil in a glafs cornute placed in a bath of afhes, fome gold difolved in aqua regia, made with three parts nitrous and one part muriatic acid; when the acid is pafied over and the gold contained in the cornute appears dry, leave the vefel to cool, then pour into it fome new aqua regia, and proceed to diftil as before. Replace the aqua regia twice upon the gold, and diftil the fame. After thefe four operations, pour by little and little into the cornute fome oil of tartar *per deliquium*, which will occafion a brisk effervescence: when this ceafes, diftil the mixture till it becomes dry, and then put fome warm water into the cornute. Shake the whole and pour it into a cucurbit, when a precipitate is depofited, the colour of which is fometimes brown and fometimes yellow: After having washed this precipitate, dry it. This mineral purple is much fuperior to the foregoing, two grains of it only were fufficient to an ounce of the bafe, whilft it required of the other two a 20th part of the bafe. He found a means of exalting the colour of the precipitate of Caffius, by putting to it a fixth part of its weight of glafs of antimony finely powdered, and of nitre in the proportion of a dram to 8 oz. of the bafe. *b*, From Silver. The calx of filver, being vitrified, produces a yellowifh grey colour. This calx enters only into the compofition of the yellow artificial diamond and the opal. M. Fontanieu introduces it into the bafe in the form of luna cornea. To prepare it, difolve the filver in precipitated nitrous acid, and afterwards pour into it a folution of fea-falt: a white precipitate is obtained; which, being washed and dried, melts very readily in the fire, and is foon volatilized, if not mixed with vitrifiable matters. To make the yellow diamond, 25 grains of this luna cornea are put to an ounce of the bafe: the dofe of filver may be diminished according to the fhade of yellow that one wifhes to procure. *c*, From Copper. The calx of copper imparts to white glafs the fineft green colour; but if this metal be not exactly in a ftate of calx, it produces a brownifh red colour. *Mountain blue*, *verdigris*, and the refidue of its diftillation, are the different preparations of copper which our author employs to make the artificial emeralds. *d*, From Iron. Although it has been asserted, that the calces of iron introduce a very fine transparent red colour into white glafs, M. Fontanieu could only obtain from it a pale red, a little opaque. The calx of iron that he employed was in the proportion of the 20th part of the bafe. There are feveral ways of preparing the calx of iron called *crocus Martis* or *faffron of Mars*. One may ufe the fcales of iron found upon the bars of the furnaces, which ferve to diftil aquafortis. By digefting filings of fteel with diftilled vinegar, then evaporating and replacing the vinegar 10 or 12 times upon thefe filings, and

and drying them alternately, a calx of iron is obtained, which must be sifted through a silk sieve, and then calcined. The calx of iron thus obtained by the vinegar, introduced a green colour inclining to a yellow. By the following process a saffron of Mars of the finest red colour is obtained: Let an ounce of iron filings be dissolved in nitrous acid in a glass cornute, and distilled over a sand-bath to dryness. After having replaced the acid or the dry calx, and re-distilling it a 2d and 3d time, it is thenedulcorated with spirit of wine, and afterwards washed with distilled water. *c*, From the *Magnet*. Calcine the magnet before it be introduced into the vitrifications: Having torrefied the magnet two hours, it must be washed and dried. It is only employed in the composition of the opal. *f*, From *Cobalt*. The calx of cobalt is only proper to introduce a blue colour into glass; but this metal is rarely free from iron and bismuth, and therefore it is first necessary to separate them from it. This is done by calcining the ore of cobalt to disengage the arsenic; afterwards the calx must be distilled in a cornute with sal ammoniac, and the iron and the bismuth are sublimed with the salt. The distillation must be repeated with the sal ammoniac till this salt is no longer coloured yellow. The cobalt which remains in the cornute is then calcined in a potsherd, and becomes a very pure calx: which being introduced into the bafe, in the proportion of a 900th part, gives it a very fine blue colour, the intensity of which may be increased at discretion by the addition of calx of cobalt. To prepare *black enamel* resembling that which is called *black agate* of Iceland; melt together $\frac{1}{2}$ lb. of one of the bases, 1 oz. of the calx of cobalt, 1 oz. of *crocus Martis*, prepared with vinegar, and 1 oz. of manganese. *g*, From *Tin*. The calx of tin is not vitrifiable alone, it renders opaque the glass with which it is melted, and forms white enamel. For this purpose, calcine the putty of tin; then wash and dry it, and sift it through a silk sieve. Take 6 lb. of the 2d bafe, the same quantity of the calcined putty of tin, and 48 grains of manganese. *b*, From *Antimony*. If the antimony be in a state of absolute calx, such as the diaphoretic antimony, it is no longer vitrifiable, and may be substituted for calx of tin to make white enamel. M. Fontanieu introduces the glass of antimony in the composition of artificial topazes. For the *oriental topaz*, he takes 14 oz. of the first bases and five drachms of the glass of antimony. To imitate the *topaz of Saxony*, he adds to each ounce of the bafe five grains of the glass of antimony. For the *topaz of Brazil*, he takes 14 oz. of the first bafe, and one ounce 24 grains of glass of antimony, and 8 grains of the *precipitate of Cassius*. *i*, From *Manganese*. This mineral, employed in a small quantity, renders the glass whiter; a larger quantity produces a very fine violet colour, and a still larger dose of it renders the glass black and opaque. There are two ways of preparing manganese: 1. The most simple consists in exposing it to a red heat, and then quenching it with distilled vinegar; it is afterwards dried and powdered, to pass it through a silk sieve. 2. Haudiquier de Blancour describes the 2d manner of preparing the manga-

nese proper to furnish a red colour; and names it *subtle manganese*. Take of manganese of Piedmont one pound; torrify and pulverize it; then mix it with a pound of nitre, and calcine the mixture during 24 hours; afterwards wash it repeatedly in warm water, till the water of the lyes has no longer any taste; dry the manganese, and mix with it an equal weight of sal ammoniac; levigate this mixture on a slab of porphyry with oil of vitriol diluted with water to the strength of vinegar. Dry the mixture, and introduce it into a cornute; distil by a graduated fire; and when the sal ammoniac is sublimed, weigh it, and add to the mixture an equal quantity. Then distil and sublime as before, and repeat the operation six times; at each time mix the sal ammoniac and the manganese upon the porphyry with diluted oil of vitriol. At Tournhout in Bohemia, there is sold a fusible glass of a yellow colour, very like that of the topaz of Brazil, which, when exposed to a degree of fire in a cupel sufficient to redden it, becomes of a very fine ruby colour, more or less deep according to the degree of fire to which it has been exposed. Our author assayed this glass, and found it to contain a great deal of lead, but was not able to discover any gold in it.

(10.) PASTES, M. FONTANIEU'S RULES, RESPECTING THE FIRE, FURNACE, AND COMPOSITIONS FOR. There are three degrees of heat very different in their energy. The fire kept up in the wind-furnaces in the laboratories of chemists, is less active than that whose effect is accelerated by the means of bellows; and a fire supported by wood, and kept up during 60 hours without interruption, produces singular effect in vitrification, and renders the glass finer and less alterable. When recourse is had to the forge, in order to operate a vitrification, it is necessary to turn about the crucible from time to time, that the mass may melt equally. Some coal also should be replaced, in proportion as it consumes towards the nozzle of the bellows; for without this precaution, we should run the risk of cooling the crucible opposite to the flame, and probably of cracking it, when all the melted mass running among the coals would be totally lost. Though this is the readiest way of melting, it should not be employed out of choice; for the crucible often breaks, or coals get into it, and reduce the calx of lead to a metallic state. The wind furnace is either square or round. A small cake of baked clay or brick, of the thickness of an inch, is placed upon the grate; and upon this cake is placed the crucible, surrounded with coals. The degree of heat produced by this furnace is much less than that of the forge: but to succeed in the vitrification, M. Fontanieu recommends a furnace described by Kunckel, which, with some necessary alterations, is represented on Plate CCLXIX. The interior part is so disposed, that we may place crucibles at three different heights; and the name of *chambers* is given to those steps upon which the crucibles are placed. Fig. 1. is a plan of the kiln at the first chamber, and fig. 2. a plan of the kiln where the fire is placed. Fig. 3. exhibits the elevation; A the ash-pit; B the door to put in the wood; C the door of the first chamber; D the door

door of the second chamber; E the third chamber; F the flue or chimney; G G iron hoops which surround the kiln to strengthen it. *Fig. 4.* is a section of the kiln: H the ash-pit with its air-hole; I the chamber for the fire, with an air-hole; K the first chamber for the crucibles; L the second chamber; M the dome; N the chimney; O O air-holes. The degree of heat cannot be equal in the 3 chambers. The chamber K is that where the heat is greatest, afterwards in that of L, and lastly, in that of M. Begin by placing the crucibles according to their size, in these different chambers; by which means the best effect in vitrification is produced. To conduct the fire well, only three billets of white wood should be put into the furnace at a time for the first 20 hours, four billets at a time for the next 20 hours, and six billets for the last 20 hours: in all 60 hours. The furnace is then left to cool, care being taken to stop the air-holes with some lute; and, in about 48 hours after, when the kiln is quite cold, the crucible is to be withdrawn. **COMPOSITIONS.** 1. For the *white diamond*: Take the base of Mayence. This crystal is very pure, and has no colours. 2. For the *yellow diamond*: to an ounce of the 1st base, add for colour 25 grains of luna cornea. or 10 grains of glass of antimony. 3. For the *emerald*: 1. To 15 oz. of either of the bases, add for colour one dr. of mountain-blue and six gr. of glass of antimony; or, 2. To 1 oz. of the 2^d base, add 20 gr. of glass of antimony and 3 gr. of calx of cobalt. 4. For the *sapphire*: To 24 oz. of the Mayence base, add 2 dr. 64 gr. of the calx of cobalt. 5. For the *amethyst*: To 24 oz. of the Mayence base, add 4 dr. of precipitate manganese and 4 gr. of precipitate of Cassius. 6. For the *beryl*: To 24 oz. of the 3^d base, add 96 gr. of glass of antimony and 4 gr. of calx of cobalt. 7. For the *black agate*: To 24 oz. of either of the bases, add 2 oz. of the mixture directed above in par. 5. 8. For the *opal*: To 1 oz. of the 3^d base, add 10 gr. of luna cornea, 2 gr. of magnet, and 26 gr. of absorbent earth. 9. For the *oriental topaz*: To 24 oz. of the 1st or 3rd base, add 5 dr. of glass of antimony. 10. For the *topaz of Saxony*: To 24 oz. of the same base, add six dr. of the glass of antimony. 11. For the *topaz of Brazil*: To 24 oz. of the 2^d or 3^d base, add 1 oz. 24 gr. of the glass of antimony, and 8 gr. of precipitate of Cassius. 12. For the *hyacinth*: To 24 oz. of the base made with rock-crystal, add 2 dr. 48 gr. of glass of antimony. 13. For the *oriental ruby*: 1. To 16 oz. of the Mayence base, add a mixture of 2 dr. 48 gr. of the precipitate of Cassius, the same quantity of crocus Martis prepared in aquafortis, the same of golden sulphur of antimony and of fusible manganese, with 2 oz. of mineral crystal; or, 2. To 20 oz. of the base made with flint, add half an ounce of fusible manganese and 2 oz. of mineral crystal. 14. For the *Malasi ruby*: 1. To 16 oz. of the Mayence base, add the above colouring powder, but diminished $\frac{1}{4}$ part; or, 2. To 20 oz. of the base made with flints, add the same colouring powder, but with $\frac{1}{4}$ 4th less of the manganese. The *falsitious* gems are easily distinguished from the *natural*, by their softness and fusibility; by their solubility in acids;

by their causing only a single refraction of the rays of light; and, in many cases by their specific gravity, which exceeds 276 in all precious gems of the first order, as the diamond, ruby, topaz, &c.

(11.) **PASTES, REVIVED ART OF MAKING IN IMITATION OF ANTIQUE GEMS.** There has been at different times a method practised by particular persons of taking the impressions and figures of antique gems, with their engravings, in glass of the colour of the original gem. This has always been esteemed a very valuable art, and greatly preferable to the ordinary method of doing it on sealing-wax or brimstone; but this art, being a secret in the hands of particular persons, who got their bread by it, died with them, and every new artist was obliged to re-invent the method; till at length Mr Homberg, having discovered it in great perfection, gave the whole process to the world to be no more lost; and since that time it has been practised in France and other places. Mr Homberg was favoured in his attempts with all the engraved gems of the king's cabinet; and took such elegant impressions, and made such exact resemblances of the originals, and that in glasses so artfully tinged to the colour of the gems themselves, that the nicest judges were deceived in them, and often took them for the true antique stones. These counterfeit gems also serve, as well as the original one, to make more copies from; so that there is no end of the numbers that may be made from one; and there is this farther advantage, that the copy may be made perfect, though the original should not be so, but should have sustained some damage. The chief care in the operation is to take the impression of the gem in a very fine earth, and to press down upon this a piece of proper glass, softened or half melted at the fire, so that the figures of the impression made in the earth may be nicely and perfectly expressed upon the glass. In general, the whole process much resembles that of the common founders; although in this nice foundry there is a number of difficulties which would not at all affect the common founder. For his purpose, every earth will serve that is fine enough to receive the impressions, and tough enough not to crack in the drying; these all serve for their use, because the metals which they cast are of a nature incapable of mixing with earth, or receiving it into them, even if both are melted together, so that the metal always easily and perfectly separates itself from the mould; but it is very difficult in the casts of glass. They are composed of a matter which differs in nothing from that of the mould, but that it has been run into this form by the force of fire, and the other has not yet been so run, but is on any occasion ready to be so run, and will mix itself inseparably with the glass in a large fire; consequently, if there be not great care used, as well in the choice of the glass as in the manner of using it, when the whole is finished, there will be found great difficulty in the separating the glass from the mould, and often this cannot be done without wholly destroying the impression. All earths run more or less easily in the fire as they are more or less mixed with saline particles.

ties. As all salts make earths run into glass, and as it is necessary to use an earth on this occasion for the making a mould, it being also necessary to the perfection of the experiment, that this earth should not melt or run, some earth must be got which naturally contains very little salt. Of all the earths which Mr Homberg examined, none proved so much divested of salts, or so fit for the purpose, as the common *TRIPOLI*, or *TRIPELA*, used to polish glass and stones. Of this earth there are two common kinds; the one reddish, and composed of several flakes or strata; the other yellowish, and of a simple structure. These are both to be had in shops. The latter is from the Levant; the former is found in England, France, and many other places. This tripela must be chosen soft and smooth to the touch, and not mixed with sandy or other extraneous matter. The yellowish kind, commonly called *Venetian tripoli*, is the best. It receives the impressions very beautifully; and never mixes with the glass in the operation, which the red kind sometimes does. Mr Homberg usually employed both kinds at once in the following manner: first, powder a quantity of the red tripela in an iron mortar, and sifting it through a fine sieve, set it by for use; then scrape with a knife a quantity of the yellow tripela into a sort of powder, and afterwards rub it till very fine in a glass mortar with a glass pestle. The finer this powder is, the finer will be the impression, and the more accurately perfect the cast. The artificer might naturally suppose, that the best method to obtain a perfect fine powder of this earth, would be washing it in water; but he must be cautioned against this. There is naturally in this yellowish tripela a sort of unctuousity, which, when it is formed into a mould, keeps its granules together, and gives the whole an uniform glossy surface: now the washing the powder takes away this unctuousity; and though it renders it much finer, it makes it leave a granulated surface, not this smooth one, in the mould; and this must render the surface of the cast less smooth. When the two tripelas are separately powdered, the red kind must be mixed with so much water as will bring it to the consistence of paste, so that it may be moulded like a lump of dough between the fingers; this paste must be put into a small crucible of a flat shape, and about half an inch or a little more in depth, and of such a breadth at the surface as is a little more than that of the stone whose impression is to be taken. The crucible is to be nicely filled with this paste lightly pressed down into it, and the surface of the paste must be strewed over with the fine powder of the yellow tripela not wetted. When this is done, the stone, of which the impression is to be taken, must be laid upon the surface, and pressed evenly down into the paste with a finger and thumb, so as to make it give a strong and perfect impression; the tripela is then to be pressed nicely even to its sides with the fingers, or with an ivory knife. The stone must be thus left a few moments, for the humidity of the paste to moisten the dry powder of the yellow tripela which is strewed over it: then the stone is to be carefully raised by the point of a needle fixed in a handle of wood; and the cru-

cible being then turned bottom upwards, it will fall out, and the impression will remain very beautifully on the tripela. If the sides of the cavity have been injured in the falling out of the stone, they may be repaired; and the crucible must then be set, for the paste to dry, in a place where it will not be incommoded by the dust. The red tripoli being the more common and the cheaper kind, is here made to fill the crucible only to save the other, which alone is the substance fit for taking the impression. When the stone is taken out, it must be examined, to see whether any thing be lodged in any part of the engraving, because if there be any of the tripela left there, there will certainly be so much wanting in the impression. When the crucible and paste are dry, a piece of glass must be chosen of a proper colour, and cut to a size proper for the figure; this must be laid over the mould, but in such a manner that it does not touch the figures, otherwise it would spoil them. The crucible is then to be brought near the furnace by degrees, and gradually heated till it cannot be touched without burning the fingers; then it is to be placed in the furnace under a muffle, surrounded with charcoal. Several of these small crucibles may be placed under one muffle; and when they are properly disposed, the aperture of the muffle should have a large piece of burning charcoal put to it, and then the operator is to watch the process, and see when the glass begins to look bright: this is the signal of its being fit to receive the impression. The crucible is then to be taken out of the fire; and the hot glass must be pressed down upon the mould with an iron instrument, to make it receive the regular impression: as soon as this is done, the crucible is to be set at the side of the furnace out of the way of the wind, that it may cool gradually without breaking. When it is cold, the glass is to be taken out, and its edges should be grated round with pincers, which will prevent its flying afterwards, which is an accident that sometimes happens when this caution has been omitted, especially when the glass is naturally tender. The different coloured glasses are of different degrees of hardness, according to their composition; but the hardest to melt are always the best for this purpose, and this is known by a few trials. If it be desired to copy a stone in relief which is naturally in creux, or to take one in creux which is naturally in relief, there needs no more than to take an impression first in wax or sulphur, and to mould that upon the paste of tripela instead of the stone itself: then proceeding in the manner before directed, the process will have the desired success. A more simple and easy method than the above is by taking the casts in gypsum, or plaster of Paris, as it is commonly called. For this purpose, the gypsum must be finely pulverised, and then mixed with clear water to the consistence of thick cream. This is poured upon the face of the gem or seal of which the impression is wanted, and which must be previously moistened with oil to facilitate the separation of the cast; and to confine the liquid plaster, it is only necessary to pin a slip of oiled paper round the sides of the seal, by way of a cape or rim. When the plaster is dry, it is to be taken off, and

set before the mouth of the furnace, to free it entirely from moisture; when it is fit to be used as a matrix in the same way as that formed with the tripela earths. Only no crucible or other receptacle is at all necessary; the casts being formed like so many small cakes half an inch thick, and thus put into the furnace with the bits of glass upon them. The glass, after coming to the proper heat, is pressed down upon the mould with an iron spatula to receive the desired impression, the pressure requisite being more or less according to the size of the stone. This method has been long practised very successfully, and with no small emolument, by Mr Deuchar of Edinburgh. The only respect in which it is inferior to the other more operose and expensive methods, consists in the chance of air-bubbles arising in pouring on the plaster; which chance, however, is less in proportion to the fineness of the gypsum employed. When air-bubbles occur, the casts may be laid aside, as it is so easy to renew them. The application of pastes to multiply and preserve the impressions of camaieux and intaglios, is an object very interesting to artists and to antiquaries, as well as to men of learning and taste in the fine arts. This art, though only lately restored in any degree of perfection, is of very considerable antiquity. The great prices which the ancients paid for the elegant gems engraved by the celebrated Greek artists, could not but early suggest to them the idea of multiplying their numbers, by taking off their impressions in wax, in sulphur, in plaster, or in clay; but more particularly in coloured glass, or that vitrified substance commonly called *paste*. As the impressions on paste are durable, and imitate the colours and brilliancy of the original stones, they serve the same purposes as the gems themselves. This art was therefore practised, not only by the Greeks, but by all the nations who cultivated Grecian taste. Many of the finest gems of antiquity are now lost, and their impressions are to be found only on ancient pastes. Great therefore is the value of these pastes. Numerous collections of them have been formed by the curious. Instances of this are found in the Florentine Museum, in Stofch's work on ancient gems with inscriptions, in Winckelman's description of Stofch's cabinet, and in the noble collection of Mr Charles Townley in London. The art of taking impressions of gems seems not to have been altogether lost even in the Gothic ages; for Heraclius, who probably lived in the 9th century, and wrote a book *De coloribus et artibus Romanorum*, teaches in very plain terms how to make them. Indeed, some of the few who then possessed this art taking advantage of the ignorance of the times, sold pastes for the original gems. This the famous emerald of the abbey of Reichnaw near Constance, although a present made by Charlemagne, is now found to be a piece of glass. And thus the celebrated emerald vase in the cathedral of Genoa is likewise found to be a paste. The Genoese got this vase at the taking of Cesarea, in 1201, as an equivalent for a large sum of money; nor was any imposition then suspected, for in 1319 they pawned it for 1200 mares of gold. But this ingenious art, revived indeed in Italy, in the time of Laurence De Medicis, and Pope Leo X. was

not cultivated in an extensive manner till the beginning of the 18th century, when M. Homberg restored it. In this he is said to have been greatly assisted and encouraged by the then duke of Orleans regent of France, who amused himself with that celebrated chemist, in taking off impressions in paste from the king of France's, his own, and other collections of gems. According to the French Encyclopedists, M. Clachant the elder, an engraver of some note, who died at Paris in 1781, learned this art from his royal highness, to whose household, his father or he, seems to have belonged. Mad. Feloix next cultivated this art. She had been taught by her father, who, in quality of *garçon de chambre* to the regent, had often assisted in the laboratory of his master, where he acquired this knowledge. Her collection consists of 1800 articles. Baron Stofch, a Prussian, who travelled over Europe in quest of original engraved stones and impressions of ancient gems, for the elegant work which he published and Picart engraved, entitled *Gemme antique colorate*, was well acquainted with this art. He had taught it to his servant Christian Dehn, who settled at Rome, where he made and sold his well known sulphur impressions and pastes. He had collected 2500 articles. Dolce has arranged them in a scientific order, and given a descriptive catalogue of them. It was chiefly from Dehn's collection that the taste for sulphurs and pastes has become so universal. They are great objects of study, and often require much learning to explain them. They have unquestionably served to extend and improve the art of engraving on stones; and have been of infinite use to painters, to statuary, and to other artists, as well as to men of classical learning and fine taste. It is very difficult to take off impressions, and perfectly to imitate various coloured cameos. It cannot be properly done in wax, sulphur, plaster, or glass of one colour only. The difficulties arising from their size and form, and from the various nature of the different sorts of glass, which do not well unite into different strata, are very numerous: nor could the completest success in this chemical and mechanical branch of the art, produce a tolerable cameo. Impressions or imitations, if unassisted by the tool of the engraver, do not succeed: because the undercutting and deep work of most of the originals, require to be filled up with clay or wax, that the moulds may come off safe without injuring them. Hence the impressions from these moulds come off hard, and destitute of delicacy, sharpness, and precision of outline, till the underworking of the moulder is cut away. But Mr Reiffenstein at Rome, by his genius, perseverance, and the assistance of able artists, has overcome these difficulties; and has had the satisfaction of succeeding, and producing variegated cameos which can hardly be distinguished from the originals. Mr Lippart of Dresden, an ingenious glazier, and an enthusiast in the fine arts, practised this branch not unsuccessfully; but not finding sufficient encouragement for his pastes of coloured glass, or perhaps from local difficulties in making them well and cheap, he abandoned this art. He substituted in its place impressions of fine white alabaster or of selenite plaster. Such impressions, when carefully soaked in

a solution of white Castile soap, then dried, and rubbed over with a soft brush, take a very agreeable polish. They show the work perhaps to better advantage than red or white sulphurs do; but they are not so durable, and are liable to be defaced by rubbing. Of these impressions Mr Lippart published 3 different collections, each of them containing 1000 articles; and to the merit of having increased the number of Mad. Feloix and Christian Dehn's collections, which are all inserted in his, he added that of employing two learned Germans to arrange and describe them. The first 1000 were arranged and described by the late Prof. Christ at Leipzig, and the 2d and 3d 1000 by Prof. Heine at Goettingen. Nor did Mr Lippart stop here; but, to make the study of antiquity more easy and acceptable to artists, he selected out of the whole collection of 3000, a smaller one of 4000 of the best and most instructive subjects, of which he himself drew up and published a description in German. But of all the artists who have taken impressions of engraved gems in sulphur and in paste, no one seems to have carried that art to such perfection as Mr James Tassie, a native of Glasgow, who has resided in London since 1766. His knowledge in various branches of the fine arts, particularly in that of drawing, naturally led him to it. The elegant portraits which he models in wax, and afterwards moulds and casts in paste, which entirely resemble cameos, are well known to the public. Mr Tassie, profiting of all the former publications of this sort, and by expense, industry, and access to many cabinets in England and other kingdoms to which former artists had not obtained admission, has now increased his collection of impressions of ancient and modern gems to the number of above 15,000 articles. It is the greatest collection of this kind that ever existed; and serves for all the purposes of artists, antiquaries, scholars, men of taste, and philosophers. The great demand for his pastes was perhaps owing in the beginning to the London jewellers, who introduced them into fashion, by setting them in rings, seals, bracelets, necklaces, and other trinkets. The reputation of this collection having reached the empress of Russia, she ordered a complete set; which being accordingly executed in the best and most durable manner, were arranged in elegant cabinets, and placed in the apartments of her superb palace at Czariko Zelo. Mr Tassie, in executing this commission, availed himself of all the advantages which the improved state of chemistry, the various ornamental arts, and the knowledge of the age, afforded. The impressions were taken in a beautiful white enamel composition, which is not subject to shrink or form air-bladders; which emits fire when struck with steel, and takes a fine polish; and which shows every stroke and touch of the artist in higher perfection than any other substance. When the colours, mixed colours, and nature of the respective originals, could be ascertained, they were imitated as completely as art can imitate them; inasmuch that many of the paste intaglios and cameos in this collection are such faithful imitations, that artists themselves have owned they could hardly be distinguished from the originals. And when the colour and nature of the gems could not be authenticated, the

pastes were executed in agreeable, and chiefly transparent, colours; constant attention being bestowed to preserve the outlines, extremities, attributes, and inscriptions. It was the learned Mr Raspe (from which this account is taken) who arranged this great collection, and made out the descriptive catalogue. His arrangement is nearly the same with that of the late Abbe Winckelmann, in his description of the gems which belonged to Baron Stofsch. But as modern works were inserted in this collection, he found it necessary to make a few alterations, and added some divisions to those of M. Winckelmann, as will appear from the following conspectus. I. Ancient Art and Engravings. Egyptian hieroglyphics, sacred animals, divinities, priests. Batlidian, Gnostic, and other talismans, &c. Oriental and barbarous ancient and modern engravings. Greek and Roman originals, copies, and imitations (the Etruscan are classed with the Greek works). A, Mythology or fabulous age. Gods, inferior divinities, religious ceremonies. B, Heroic age before the siege of Troy. C, Siege of Troy. D, Historic age. Of Carthage, Greece, Rome, subjects unknown. E, Fabulous animals and chimeras. F, Vases and urns. II. Modern Art and Engravings. A, Religious subjects. B, Portraits of kings and sovereigns. C, Portraits of illustrious men in alphabetical order. D, Portraits unknown. E, Devices and emblems. F, Cyphers, arms, supporters, and medley of modern history.

* *To PASTE. v. a. [passer, Fr. from the noun.]* To fasten with paste.—By *passing* the vowels and consonants on the sides of dice, his eldest son played himself into spelling. *Locke*.—Young creatures have learned their letters and syllables, by having them *passed* upon little flat tablets. *Watts*.

(1.) * *PASTEBOARD. n. f. [paste and board.]* Masses made anciently by passing one paper on another: now made sometimes by macerating paper and casting it in moulds, sometimes by pounding old cordage, and casting it in forms.—Tintoret made chambers of board and *pasteboard*, proportioned to his models. *Dryden*.—I would not make myself merry even with a piece of *pasteboard*, that is invested with a public character. *Addison*.

(2.) * *PASTEBOARD. adj.* Made of pasteboard.—Put silkworms on whitened brown paper into a *pasteboard* box. *Mortimer*.

(3.) *PASTEBOARD* is chiefly used for binding books, making letter-cases, &c. See *PAPER-MAKING*, *Sec. II*, § 5.

(1.) * *PASTEL. n. f. [glafum.]* An herb. *Ainsl.*

(2.) *PASTEL. See PASTIL.*

(1.) * *PASTERN. n. f. [pasturon, Fr.]* 1. That part of the leg of a horse between the joint next the foot and the hoof.—I will not change my horse with any that treads on four *pasterns*. *Shak.* *Henry V.*

Upright he walks on *pasterns* firm and straight. *Dryden*.

—Being heavy, he should not tread stiff, but have a *pastern* made him, to break the force of his weight. *Grew*. 2. The legs of an human creature in contempt.—

So strait she walk'd, and on her *pasterns* high. *Dryden*.

(2.) *PASTERN*, in the manege. See *FARRIERY*, *Part*

Part I, Sect. I. This part should be short, especially in middle-sized horses; because long pasterns are weak, and cannot so well endure travelling.

(3.) **PASTER** JOINT, the joint next a horse's foot.

(1.) * **PASTIL**. *n. f.* [*pastillus*, Lat. *passille*, Fr.] A roll of paste.—To draw with dry colours, make long *pastils*, by grinding red lead with strong wort, and to roll them up like pencils. *Peacbam.*

(2.) **PASTIL**, or **PASTEL**, among painters, is a paste made of different colours ground up with gum-water, to make **CRAYONS**. See **PAINTING**, *Part II, Sect. V, § II.*

(3.) **PASTIL**, in pharmacy, is a dry composition of sweet-smelling resins, aromatic woods, &c. sometimes burnt to clear and scent the air of a chamber.

(1.) * **PASTIME**. *n. f.* [*pass* and *time*.] Sport; amusement; diversion.—It was more requisite for Zelmene's hurt to rest, than sit up at those *pastimes*. *Sidney.*—

I'll be as patient as a gentle stream,
And make a *pastime* of each weary step. *Shak.*
Pastime passing excellent. *Shak.*
Find *pastime*, and bear rule. *Milton.*

—A man, much addicted to luxury, recreation and *pastime*, should never pretend to devote himself entirely to the sciences. *Watts.*

(2.) **PASTIMES** of some kind seem to be absolutely necessary, and to none more than to the man of study; for the most vigorous mind cannot bear to be always bent. Constant application to one pursuit, if it deeply engage the attention, is apt to unhinge the mind, and to generate madness; of which the *Don Quixote* of Cervantes, and the astronomer of Johnſon, are two admirably conceived instances: confirmed by too many facts in real life. See **PASCAL**, **SWIFT**, &c. But though *pastime* is necessary to relieve the mind, it indicates great frivolity when made the business of life; and yet the rich and the great, who are not obliged to labour for the means of subsistence, too often rove from *pastime* to *pastime* with as constant assiduity as the mechanic toils for his family, or as the philosopher devotes himself to science. When those *pastimes* tend to give elasticity to the mind or strength to the body, such conduct is not only allowable, but praise-worthy: but when they produce effects the reverse of these, it is both hurtful and criminal. The gaming-table, the masquerade, the midnight assembly of any sort, must of necessity enfeeble both the body and the mind; and yet such are the fashionable amusements of the present day, to which many a belle and many a beau sacrifice their beauty, their health, their quiet, and their virtue. Far different were the *pastimes* of our wiser ancestors: Remote from effeminacy, they were innocent, manly, and generous exercises. From ancient records, it appears, that the sports, amusements, pleasures, and recreations, of our ancestors, as described by **FITZ-STEPHEN**, added strength and agility to the wheels of state mechanism, while they had a direct tendency towards utility. For most of these ancient recreations are relatable into the public defence of the state against the attacks of a foreign enemy. The play at ball, derived from the Romans, is first

introduced by this author as the common exercise of every school-boy. The performance was in a field, where the resort of the most substantial and considerable citizens, to give encouragement and countenance to this feat of agility, was splendid and numerous. The intention of this amusement was to make the juvenile race active, nimble, and vigorous; which qualities were requisite whenever their assistance should be wanted in the protection of their country. The next species of *pastime* had a similar tendency, although it was only cock-fighting, held annually in the afternoon of Shrove-Tuesday; for the amazing spirit and courage displayed by these animals tended to inspire the youth of a warlike nation with a heroic disregard of life itself, when put in competition with honour and patriotism. Another species of manly exercise was truly martial, and intended to qualify the adventurers for martial discipline. It is related by **Fitz-Stephen** thus: "Every Friday in Lent, a company of young men comes into the field on horseback, attended and conducted by the best horsemen: then march forth the sons of the citizens, and other young men, with disarmed lances and shields; and there practise feats of war. Many courtiers likewise, when the king is near the spot, and attendants upon noblemen, do repair to these exercises; and while the hope of victory does inflame their minds, they show by good proof how serviceable they would be in martial affairs." This evidently is of Roman descent, and immediately brings to our recollection the *Ludus Troje*, supposed to be the invention, as it was the common exercise, of Alcanius. The common people, in that age of masculine manners, made every amusement where strength was exerted the subject matter of instruction and improvement: instructed to exert their bodily strength in the maintenance of their country's rights; and their minds improved, by such exertion, into every manly and generous principle. In the vacant intervals of industry and labour, commonly called the *holy-days*, indolence and inactivity, which now mark this portion of time, were found only in those who were disempowered with age or infirmity. **Fitz-Stephen** says, "In Easter holidays they fight battles upon the water. A shield is hanged upon a pole, fixed in the middle of the stream. A boat is prepared without oars, to be borne along by the violence of the water; and in the fore part thereof standeth a young man, ready to give charge upon the shield with his lance. If so be that he break his lance against the shield, and doth not fall, he is thought to have performed a worthy deed. If without breaking his lance he runs strongly against the shield, down he falleth into the water; for the boat is violently forced with the tide: but on each side of the shield ride two boats, furnished with young men, who recover him who falleth soon as they may. In the holidays all the summer the youths are exercised in leaping, dancing, shooting, wrestling, casting the stone, and practising their shields; and the maidens trip with their timbrels, and dance as long as they can well see. In winter, every holiday before dinner, the boats prepared for brawn are set to fight, or else bulls or bears are baited." Such were the laudable pursuits to which leisure was devoted by our forefathers, so far

far back as 1130. Their immediate successors breathed the same spirit. In 1222, the 6th year of Henry III. certain masters in exercises of this kind made a public profession of their instructions and discipline, which they imparted to those who were desirous of attaining excellence and victory in these honourable achievements. About this period, persons of rank and family introduced the play of TENNIS; and erected courts or oblong edifices for the performance of it. About 1253, the 38th of Henry III. the QUINTAN was a sport much in fashion in almost every part of the kingdom. This contrivance consisted of an upright post firmly fixed in the ground, upon the top of which was a cross piece of wood, moveable upon a spindle; one end of which was broad like the flat part of an halberd, while at the other end was hung a bag of sand. The exercise was performed on horseback. The masterly performance was, when, upon the broad part being struck with a lance, which sometimes broke it, the assailant rode swiftly on, so as to avoid being struck on the back by the bag of sand, which turned round instantly upon the stroke given, with a very swift motion. He who executed this feat in the most dexterous manner was declared victor, and the prize to which he became entitled was a peacock. But if, upon the aim taken, the contender miscarried in striking at the broadside, his impotency of skill became the ridicule and contempt of the spectators. Dr Plott, in his *Nat. Hist. of Oxfordsh.* tells us, that this pastime was in practice in his time at Deddington. He and Matthew Paris give similar accounts. But all the manly pastimes seem to have given place to one indeed no less manly, which was ARCHERY. This had a continuance to the reign of Charles I. It appears from 33 Hen. VIII. that by the intrusion of other pernicious games, archery had been for a long time disused; to revive which a statute was made. Towards the beginning of James I.'s reign, military prowess seems to have founded a retreat. He, to gratify the impotency of the common people, and at the same time to obviate his own fears upon a refusal, published a book of sports, in which the people had been some time before indulged on *Sunday evenings*, but which had been lately prohibited. These sports consisted of dancing, fencing, wrestling, church ales, and other profanations of that day. Charles, his successor, wisely, in the very entrance of his reign, abolished these sports, which was no doubt proper, and showed the distinguished piety of this unfortunate monarch. But in this age likewise ended the manly sports of Britons, and nothing was introduced that could compensate for the loss.

PASTINACA, the **PARSNAP**, a genus of the digynia order, belonging to the pentandria class of plants; and in the natural method ranking under the 45th order, *Umbellatæ*. The fruit is an elliptical compressed plane; the petals are involuted and entire. There are only two species:

1. **PASTINACA PANAX**. Dr Woodville, in his *Medical Botany*, gives the following account of this vegetable: The root is perennial, thick, fleshy, tapering like the garden parsnep; the stalk is strong, branched, rough towards the bottom, and rises 7 or 8 feet in height; the leaves are pinnated,

consisting of several pairs of pinæ, which are oblong, serrated, veined, and towards the base appear unformed on the upper side: the flowers are small, of a yellowish colour, and terminate the stem and branches in flat umbels; the general and partial umbels are composed of many radii; the general and partial involucre are commonly both wanting; all the florets are fertile, and have a uniform appearance; the petals are 5, lance-shaped, and curled inwards; the 5 filaments are spreading, curved, longer than the petals, and furnished with roundish antheræ; the germen is placed below the corolla, supporting two reflexed styles, which are supplied with blunt stigmata; the fruit is elliptical, compressed, divided into two parts containing two flat seeds, encompassed with a narrow border. (See *Plate CCLXIX.*) It is a native of the south of Europe, and flowers in June and July. This species of parsnep was cultivated in 1731 by Mr P. Miller, who observes, that its "roots are large, sweet, and accounted very nourishing," therefore recommended for cultivation in kitchen-gardens. It bears the cold of our climate very well, and commonly matures its seeds; and its juice here manifests some of those qualities which are discovered in the officinal opoponax; but it is only in the warm regions of the east, and where this plant is a native, that its juice concretes into this gummy resinous drug. Opoponax is obtained by means of incisions made at the bottom of the stalk of the plant, whence the juice gradually exudes; and by undergoing spontaneous concretion, assumes the appearance under which we have it imported from Turkey and the East Indies. It readily mingles with water, by triture, into a milky liquor, which on standing deposits a portion of resinous matter, and becomes yellowish: to rectified spirit it yields a gold-coloured tincture, which tastes and smells strongly of opoponax. Water distilled from it is impregnated with its smell, but no essential oil is obtained on committing moderate quantities to the operation. See **OPOPONAX**.

2. **PASTINACA SATIVA**, *garden parsnep*, is an exceeding fine esculent root. It is propagated by seeds sown in Feb. or March, in a rich mellow soil, which must be deep dug, that the roots may be able to run deep without hindrance. It is common to sow carrots at the same time, upon the same ground with the parsneps; and if the carrots are designed to be drawn young, there is no harm in it. The parsneps, when they are grown up a little, must be thinned to a foot distant, and kept clear of weeds. They are finest tasted just at the season when the leaves are decayed; and such as are desirous to eat them in spring should have them taken up in autumn, and preserved in sand. When the seeds are to be sowed, some very strong and fine plants should be left 4 feet distant; and towards the end of Aug. or beginning of Sept. the seeds will be ripe: they must then be gathered, and dried on a coarse cloth. They should always be sown the spring following; for they do not keep well. Hints have been given, and experiments made, by agricultural societies, respecting parsneps, to raise them for winter food to cattle. It has long been a custom in some parts of Britany, to sow parsneps in the open field for the food

food of cattle; as we are informed by the transactions of a society instituted in that province (Vol. 1.) for the encouragement of the economical and commercial interests of their country. "It is of great importance (say they) that parsneps should be universally cultivated; because they afford an excellent and wholesome food for all kinds of cattle during winter, and may be used to great advantage to fatten them. Hogs have no other food in all that season, and our bullocks and oxen thrive well upon it. Cows fed with parsneps give more milk than with any other winter fodder, and that milk yields better butter than the milk of cows nourished with any other substance. Horses fatten with this food; though some pretend that it renders them less mettlesome, and hurts their legs and eyes. Cattle eat these roots raw, at first sliced lengthwise; and when they begin not to relish them, they are cut in pieces, put into a large copper, pressed down there, and boiled with only so much water as fills up the chafins between them. They then eat them very greedily, and continue to like them."

PASTO, or **ST JUAN DE PASTO**, a town of Terra Firma, in Popayan; seated in a valley, watered by several rivers; 80 miles NNE. of Quito, according to Mr Cruttwell; but Dr Brookes makes it 120 miles N. of it, and 120 S. of Popayan. Lon. 76. 55. W. Lat. 1. 50. N.

PASTOPHORI, among the ancients, priests whose office it was to carry the images, along with the shrines of the gods, at solemn festivals, when they were to pray for rain, fair weather, or the like. The Greeks had a college of this order of priests in Sylla's time.

PASTOPHORIA, the cells or apartments near the temples, where the pastophori lived. There were several lodging rooms for the priests of a similar kind in the temple of Jerusalem.

* **PASTOR**. *n. f.* [*pastor*, Latin; *pasteur*, Fr.] 1. A shepherd.—

The pipe on which th' Ascræan *pastor* play'd.
Dryden.

The *pastor* shears their hoary beards. *Dryd.*
2. A clergyman who has the care of a flock; one who has souls to feed with sound doctrine.—The *pastor* maketh suits of the people, and they with one voice testify a general assent thereunto. *Hooker.*—The first branch of the great work belonging to a *pastor* of the church, was to teach. *South.*—All bishops are *pastors* of the common flock. *Lesley.*—Neither was the expedient then found out of maintaining separate *pastors* out of private purities. *Swift.*

PASTORA. See **PASTARO**.
(1.) * **PASTORAL**. *adj.* [*pastoralis*, Latin; *pastoral*, French.] 1. Rural; rustick; befitting shepherds; imitating shepherds.—In those *pastoral* pastimes, a great many days were sent to follow their flying predecessors. *Sidney.* 2. Relating to the care of souls.—Their lord and master taught concerning the *pastoral* care he had over his own flock. *Hooker.*—The bishop of Salisbury recommendeth the tenth satire of Juvenal in his *pastoral* letter. *Dryden.*

(2.) * **PASTORAL**. *n. f.* A poem in which any action or passion is represented by its effects upon a country life: or, according to the common

practice, in which speakers take upon them the character of shepherds; an idyl; a bucolick.—*Pastoral* is an imitation of the action of a shepherd; the form of this imitation is dramatick or narrative, or mixed of both; the fable simple; the manners not too polite, nor too rustick. *Pope.*—The best actors in the world, for tragedy, comedy, history, *pastoral*. *Shak.*—There ought to be the same difference between *pastorals* and elegies, as between the life of the country and the court: the latter should be smooth, clean, tender, and passionate; the thoughts may be bold, more gay, and more elevated than in *pastoral*. *Walsh.*

(3.) **PASTORAL LIFE** may be considered in three different views: either such as it now actually is, when the state of shepherds is reduced to be a mean, servile, and laborious state; when their employments are become disagreeable, and their ideas gross and low: or such as we may suppose it once to have been in the more early and simple ages, when it was a life of ease and abundance; when the wealth of men consisted chiefly in flocks and herds, and the shepherd, though unrefined in his manners, was respectable in his state: or, lastly, such as it never was, and never can in reality be, when, to the ease, innocence, and simplicity of the early ages, we attempt to add the polished taste and cultivated manners of modern times. Of these three states, the first is too gross and mean, the last too refined and unnatural, to be made the ground-work of pastoral poetry. Either of these extremes is a rock upon which the poet will split, if he approach too near it. We shall be disgusted if he give us too much of the servile employments and low ideas of actual peasants, as Theocritus is censured for having sometimes done; and if, like some of the French and Italian writers of pastorals, he makes his shepherds discourse as if they were courtiers and scholars, he then retains the name only, but wants the spirit of pastoral poetry.

(4.) **PASTORAL MUSIC**. See **MUSIC**, *Introduct.* § 15.

(5.) **PASTORAL POETRY**. See **POETRY**, *Part II.* *Sec.* IV.

PASTRANA, a town of Spain, in New Castile, 10 miles SSE. of Guadalupe, and 32 E. of Madrid; between the Tajo and Tajuna. Lon. 2. 46. W. Lat. 40. 26. N.

(1.) * **PASTRY**. *n. f.* [*pastissarie*, Fr. from *paste*.] 1. The act of making pies.—

Let never fresh machines your *pastry* try.
King.

2. Pies or baked paste.—
The feed cake, the *pastries* and the surmety pot. *Tusser.*

Beasts of chase, or fowls of game,
In *pastry* built, or from the spit, or boil'd. *Milt.*

3. The place where pastry is made.—
They call for dates and quinces in the *pastry*.
Shak.

(2.) **PASTRY** is that branch of cookery which is chiefly taken up in making pies, pasties, cakes, &c. See **PASTE**, § 2. Dr Cullen observes, that paste is very hard and indigestible without butter; and even with it, is apt to produce heartburn and acedency. Perhaps this is increased by the burned butter, from a certain sensibility in

in the stomach, which occasions all empyreumatic oils to be long retained, and so turn rancifcent and acid.

* **PASTRY-COOK.** *n. f.* [*pastry* and *cook*.] One whose trade is to make and sell things baked in paste.—I wish you knew what my husband has paid to the *pastry-cooks* and confectioners. *Arbutnot.*

* **PASTURABLE.** *adj.* [from *pasture*.] Fit for pasture.

* **PASTURAGE.** *n. f.* [*pasturage*, French.] 1. The business of feeding cattle.—All men would fall to *pasturage*, and none to husbandry. *Spenser.*

2. Lands grazed by cattle.—The riches of the country consisted chiefly in flocks and *pasturage*. *Addison.* 3. The use of pasture.—Cattle fatted by good *pasturage*, after violent motion, die suddenly. *Arbutnot.*

(1.) * **PASTURE.** *n. f.* [*pasture*, French.] 1. Food; the act of feeding.—Unto the conservation is required a solid *pasture*. *Brown.* 2. Ground on which cattle feed.—

A careless herd,
Full of the *pasture*, jumps along by him. *Shak.*
—When there was not room for their herds to feed together, they, by consent, separated and enlarged their *pasture*. *Locke.*—

On nature's common, far as they can see
Or wing, they range and *pasture*. *Thomson.*
3. Human culture; education. Not used.—

From the first *pastures* of our infant age,
To elder cares and man's severer page. *Dryden.*

(2.) **PASTURE, or** } is that reserved for feeding
PASTURE LAND, } cattle. Pasture land, is of such advantage to husbandry, that many prefer it even to corn land, because of the small hazard and labour that attends it; and as it lays the foundation for most of the profit that is expected from the arable land, because of the manure afforded by the cattle which are fed upon it. Pasture ground is of two sorts; the one is meadow land, which is often overflowed; and the other is upland, which lies high and dry. The first of these will produce a much greater quantity of hay than the latter, and will not require manuring or dressing so often; but then the hay produced on the upland is much preferable to the other; as is also the meat which is fed in the upland more valued than that which is fatted in rich meadows; though the latter will make the fatter and larger cattle, as is seen by those which are brought from the low rich lands in Lincolnshire. But where people are nice in their meat, they will give a much larger price for such as hath been fed on the downs, or in short upland pasture, than for the other, which is much larger. Besides this, dry pastures have an advantage over the meadows, that they may be fed all the winter, and are not so subject to poach in wet weather; nor will there be so many weeds produced; which are great advantages, and in a great measure recompense for the smallness of the crop. We have already mentioned the advantages of meadow land; (See **MEADOW**;) therefore shall here only mention some methods for improving of upland pasture.

(3.) **PASTURE LAND, METHODS OF IMPROVING.**
The first improvement of upland pasture is, by fencing it, and dividing it into small fields of four

five, six, eight, or ten, acres each, planting timber trees in the hedge-rows, which will screen the grafs from the dry pinching winds of March, which will prevent the grafs from growing in large open lands; so that if April proves a dry month, the land produces very little hay; whereas in the sheltered fields, the grafs will begin to grow early in March, and will cover the ground, and prevent the sun from parching the roots of the grafs, whereby it will keep growing, so as to afford a tolerable crop, if the spring should prove dry. But in fencing of land the inclosure must not be made too small, especially where the hedge-rows are planted with trees; because, when the trees are advanced to a considerable height, they will spread over the land; and where they are close, will render the grafs four; so that instead of being of an advantage, it will greatly injure the pasture. The next improvement of upland pasture is, to make the turf good, where, either from the badness of the soil, or want of proper care, the grafs hath been destroyed by rushes, bushes, or mole hills. Where the surface of the land is clayey and cold, it may be improved by paring it off, and burning it; but if it is an hot sandy land, then chalk, lime, marle, or clay, are very proper manures to lay upon it; but this should be laid in pretty good quantities, otherwise it will be of little service to the land. If the ground is over run with bushes or rushes, it will be of great advantage to the land to grub them up towards the latter part of summer, and, after they are dried, to burn them, and spread the ashes over the ground just before the autumnal rains; at which time the surface of the land should be levelled, and sown with grafs-seed, which will come up in a short time, and make good grafs the following spring. So also, when the land is full of mole-hills, these should be pared off, and either burnt for the ashes, or spread immediately on the ground when they are pared off, observing to sow the bare patches with grafs-seed just as the autumnal rains begin. Where the land has been thus managed, it will be of great service to roll the turf in the months of February and March with an heavy wood roller; always observing to do it in moist weather, that the roller may make an impression; this will render the surface level, and make it much easier to mow the grafs than when the ground lies in hills; and will also cause the turf to thicken, so as to have what the people usually term a *good bottom*. The grafs likewise will be the sweeter for this husbandry, and it will be a great help to destroy weeds. Another improvement of upland pastures is, the feeding of them; for where this is not practised, the land must be manured at least every 3d year; and where a farmer hath much arable land in his possession, he will not care to part with his manure to the pasture. Therefore every farmer should endeavour to proportion his pasture to his arable land, especially where manure is scarce, otherwise he will soon find his error; for the pasture is the foundation of all the profit which may arise from the arable land. Whenever the upland pastures are mended by manure, there should be a regard had to the nature of the soil, and a proper sort of manure applied: as, for instance, all hot sandy land

M should

should have a cold manure; neat's dung and swine's dung are very proper for such lands; but for cold lands, horse dung, ashes, and other warm manures, are proper. And when these are applied, it should be done in autumn, before the rains have soaked the ground, and rendered it too soft to cart on; and it should be carefully spread, breaking all the clods as small as possible, and then harrowed with bushes, to let it down to the roots of the grass. When the manure is laid on at this season, the rains in winter will wash down the salts, so that the following spring the grass will receive the advantage of it. There should also be great care taken to destroy the weeds in the pasture every spring and autumn: for, where this is not practised, the weeds will ripen their seeds, which will spread over the ground, and thereby fill it with such a crop of weeds as will soon overbear the grass, and destroy it; and it will be very difficult to root them out afterwards; especially ragwort, and such other weeds as have down adhering to their seeds. The grasses sown in these upland pastures seldom degenerate, if the land is tolerably good: whereas the low meadows, which are overflowed in winter, in a few years turn to a harsh rushy grass, though the upland will continue a fine sweet grass for many years without renewing. There is no part of husbandry of which the farmers are in general more ignorant than that of the pasture; most of them suppose, that when old pasture is plowed up, it can never be brought to have a good sward again; so their common method of managing their land after ploughing, is to sow with their crop of barley some grass seeds as they call them; that is, either the red clover, which they intend to stand two years after the corn is taken off the ground, or rye-grass mixed with trefoil; but as all these are at most but biennial plants, whose roots decay soon after their seeds are perfected, so the ground, having no crop upon it, is again ploughed for corn; and this is the constant round which the lands are employed in by the better sort of farmers. But whatever may have been the practice of these people, it is certainly possible to lay down lands which have been in tillage with grass, in such a manner as that the sward shall be as good, if not better, than any natural grass, and of as long duration. But this is never to be expected in the common method of sowing a crop of corn with the grass seeds; for, wherever this has been practised, if the corn has succeeded well, the grass has been very poor and weak; so that if the land has not been very good, the grass has scarcely been worth sowing; for the following year it has produced but little hay, and the year after the crop is worth little, either to mow or feed. Nor can it be expected to be otherwise; for the ground cannot nourish two crops; and if there were no deficiency in the land, yet the corn, being the first and most vigorous of growth, will keep the grass from making any considerable progress; so that the plants will be extremely weak, and but very thin, many of them which come up in the spring being destroyed by the corn; for whenever there are roots of corn, it cannot be expected there should be any grass. Therefore the grass must be thin; and if the land is not in

good heart to supply the grass with nourishment, that the roots may branch out after the corn is gone, there cannot be any considerable crop of clover; and as their roots are biennial, many of the strongest plants will perish soon after they are cut; and the weak plants, which had made but little progress before, will be the principal part of the crop for the succeeding year; which is many times not worth standing. Therefore, when ground is laid down for grass, there should be no crop of any kind sown with the seeds; or at least the crop should be sown very thin, and the land should be well ploughed and cleaned from weeds, otherwise the weeds will come up first, and grow so strong as to overbear the grass, and if they are not picked up, will entirely spoil it.

(4.) PASTURE LAND, SEASON AND SEEDS PROPER FOR SOWING IN. The best season to sow the grass seeds upon dry land, when no other crop is sown with them, is about the middle of September, or sooner if there is an appearance of rain: for the ground being then warm, if there happen some good showers of rain after the seed is sown, the grass will soon make its appearance, and get sufficient rooting in the ground before winter: so will not be in danger of having the roots turned out of the ground by frost, especially if the ground is well rolled before the frost comes on, which will press it down, and fix the earth close to the roots. Where this hath not been practised, the frost has often loosened the ground so much, as to let in the air to the roots of the grass, and done it great damage; and this has been brought as an objection to the autumnal sowing of grass; but it will be found to have no weight if the above direction is practised: nor is there any hazard of sowing the grass at this season, but that of dry weather after the seeds are sown; for if the grass comes up well, and the ground is well rolled in the end of October, or the beginning of November, and repeated again the beginning of March, the sward will be closely joined at bottom, and a good crop of hay may be expected the same summer. But where the ground cannot be prepared for sowing at that season, it may be performed in the middle or end of March, according as the season is early or late; for, in backward springs, and in cold land, we have often sowed the grass in the middle of April with success; but there is danger, in sowing late, of dry weather, and especially if the land is light and dry; for we have seen many times the whole surface of the ground removed by strong winds at that season; so that the seeds have been driven in heaps to one side of the field. Therefore, whenever the seeds are sown late in the spring, it will be proper to roll the ground well soon after the seeds are sown, to settle the surface, and prevent its being removed. The sorts of seeds which are the best for this purpose, are, the best sort of upland hay seeds, taken from the clearest pastures, where there are no bad weeds; if this seed is sifted to clean it from rubbish, three bushels will be sufficient to sow an acre of land. The other sort is the *trifolium pratense album*, commonly called *white Dutch clover*, or *white honeyfuckle grass*. Of this seed 8 lb. will be enough for one acre. The grass seed should be sown first, and then the Dutch clover-seed may be afterwards

afterwards sown; but they should not be mixed, because the clover seeds being the heaviest will fall to the bottom, and consequently the ground will be unequally sown. When the seeds are come up, if the land should produce many weeds, these should be drawn out before they grow so tall as to overbear the grafs; for where this has been neglected, the weeds have taken such possession of the ground as to keep down the grafs, and starve it; and when these weeds have been suffered to remain until they have shed their seeds, the land has been so plentifully stocked with them as entirely to destroy the grafs; therefore it is a principal care in husbandry, never to suffer weeds to grow on the land. If the ground is rolled two or three times at proper distances after the grafs is up, it will press down the grafs, and cause it to make a thicker bottom: for, as the Dutch clover will put out roots from every joint of the branches which are near the ground, so, by pressing down of the stalks, the roots will mat so closely together, as to form a sward so thick as to cover the whole surface of the ground, and form a green carpet, and will better resist the drought. For if we examine the common pastures in summer, in most of which there are patches of this white honey-suckle grafs growing naturally, we shall find these patches to be the only verdure remaining in the fields. And this the farmers in general acknowledge, is the sweetest feed for all sorts of cattle; yet they never thought of propagating it by seeds, nor has this been long practised in England. As the white clover is an abiding plant, so it is certainly the very best sort to sow, where pastures are laid down to remain; for as the hay-seeds which are taken from the best pastures will be composed of various sorts of grafs, some of which may be but annual, and others biennial; so, when these go off, there will be many and large patches of ground left bare and naked, if there is not a sufficient quantity of the white clover to spread over and cover the land. Therefore a good sward can never be expected where this is not sown; for in most of the natural pastures, we find this plant makes no small share of the sward; and it is equally good for wet and dry land, growing naturally upon gravel and clay in most parts of England: which is a plain indication how easily this plant may be cultivated to great advantage in most sorts of land throughout this kingdom. Therefore the true cause why the land which has been in tillage is not brought to a good turf again, in the usual method of husbandry, is, from the farmers not distinguishing which grasses are annual from those which are perennial; for if annual or biennial grasses are sown, these will of course soon decay; so that, unless where some of their seeds may have ripened and fallen, nothing can be expected on the land but what will naturally come up. Therefore this, with the covetous method of laying down the ground with a crop of corn, has occasioned the general failure of increasing the pasture in many parts of Britain, where it is now much more valuable than any arable land. After the ground has been sown in the manner before directed, and brought to a good sward, the way to preserve it good is, by constantly rolling the ground with a heavy roller, every spring and au-

tumn, as hath been before directed. This piece of husbandry is rarely practised by farmers; but those, who do, find their account in it, for it is of great benefit to the grafs. Another thing should also be carefully performed, which is, to cut up docks, dandelion, knapweed, and all such weeds, by their roots, every spring and autumn; this will increase the quantity of good grafs, and preserve the pastures in beauty. Dressing of these pastures every 3d year is also a good piece of husbandry; for otherwise it cannot be expected the ground should continue to produce good crops. Besides this, it will be necessary to change the seasons of mowing, and not to mow the same ground every year, but to mow one season and feed the next: for where the ground is every year mown, it must be constantly dressed, as are most of the grafs grounds near London, otherwise the ground will be soon exhausted.

(1.) * *To PASTURE. v. a.* [from the noun.] To place in a pasture.

(2.) * *To PASTURE. v. n.* [from the noun.] To graze on the ground.—

Those rare and solitary; these in flocks

Pasturing at once. *Milton.*

* *PASTY. n. f.* [*paste*, Fr.] A pie of crust raised without a dish.—

Of the paste a coffin will I rear,

And make two *pasties* of your shameful heads. *Shak.*

—If ye pinch me like a *pasty*, I can say no more. *Shak.*

If you'd fright an alderman and mayor,

Within a *pasty* lodge a living hare. *King.*

Not quite a madman, though a *pasty* fell,

And much too wise to walk into a well. *Pope.*

(1.) * *PAT. adj.* [from *pas*, Dutch, *Skinner*.] Fit; convenient; exactly suitable either as to time or place. This is a low word, and should not be used but in burlesque writings.—*Pat, pat*; and here's a marvellous convenient place for our rehearsal. *Shak. Midf. Night's Dream.*

Now I might do it *pat*, now he is praying.

Shak.

They never saw two things so *pat*,

In all respects, as this and that. *Hudibras.*

—Zwinglius dreamed of a text, which he found very *pat* to his doctrine of the Eucharist. *Atterb.*

He was sorely put to't at the end of a verse,

Because he could find no word to come *pat* in. *Swift.*

(2.) * *PAT. n. f.* [*patte*, Fr. is a foot, and thence *pat* may be a blow with the foot.] 1. A light quick blow; a tap.—The least noise is enough to disturb the operation of his brain; the *pat* of a shuttle-cock, or the creaking of a jack will do it. *Collier.* 1. Small lump of matter beat into shape with the hand.

* *To PAT. v. a.* [from the noun.] To strike lightly; to tap.—Children prove, whether they can rub upon the breast with one hand, and *pat* upon the forehead with another, and straightways they *pat* with both. *Bacon's Nat. Hist.*

Gay *pats* my shoulder, and you vanquish quite. *Pope.*

* *PATACHE. n. f.* A small ship. *Ainsworth.*

* *PATACON. n. f.* A Spanish coin worth four shillings and eight pence English. *Ainsworth.*

PATÆCI, in mythology, images of gods which the Phœnicians carried on the prows of their gallees. Herodotus, lib. iv. calls them *patæci*. The word is Phœnician, and derived from *pathica*, i. e. *titulus* a title, or mark of dignity. See Bochart's Chanaan, lib. ii. cap. 3. But Scaliger does not agree. Morin derives it from *simon*, *monkey*, this animal having been an object of worship among the Egyptians, and hence might have been honoured by their neighbours. Mr Elfnier has observed, that Herodotus does not call the *patæci* gods; but that they obtained this dignity from the liberality of Hesychius and Suidas, and other ancient lexicographers, who place them at the stern of ships; whereas Herodotus placed them at the prow. Scaliger, Bochart, and Selden, have taken some pains about this subject. Mr Morin has also given us a learned dissertation on this head in the *Mémoires de l'Acad. des inscript. et Belles Lettres*, tom. i.; but Mr Elfnier thinks it wants evidence.

PATAGONIA, a country of South America, comprehending all that country from Chili and Paraguay to the utmost extremity of S. America; that is, from 35° almost to 54° of latitude: being furrounded by Chili, Paraguay, the South and North Seas, and the Straits of Magellan, which separate it from *Terra del Fuego*, and extend about 116 leagues in length from sea to sea, but only from half a league to 3, or 4 in breadth. This country had the name of *TERRA MAGELLANICA*, from Magellan. See *MAGELLANIA*. The lofty mountains of *ANDES*, which are covered with snow a great part of the year, crossing the country from N. to S. the air is much colder than in the N. under the same latitude. Towards the N. it is covered with wood, but on the S. not a single tree fit for any mechanical purpose is to be seen: yet there is good pasture, and incredible numbers of wild horned cattle and horses. The E. coast is mostly low land, with few or no good harbours; one of the best is Port St Julian. Patagonia is inhabited by a variety of Indian tribes; as the **PATAGONS**, from which the country takes its name; the *Pampas*, the *Coffaris*, &c. of whom we know very little. From the accounts of Com Byron and his crew, and the testimonies of other navigators, some of them are of a gigantic stature, and clothed with skins; others go almost quite naked, notwithstanding the inclemency of the climate. Some of them also, who live about the Straits, are perfect savages: but those with whom Com. Byron and his people conversed, were gentle and humane. They live on fish and game, and what the earth produces spontaneously. On the coasts of Patagonia lie a great number of islands. On the west coasts are the islands Madre de Dios, Santa Trinidad, Santa Cruz, the isles of the Chuniens and Huillans, the Sarmientos, and many others; to the number of 80 in all. Of those on the S. coast, the most considerable are *TERRA DEL FUEGO*, and *STATEN LAND*. See these articles. A vast deal has been said respecting the stature of the Patagians, by people of different nations, and on various occasions. Mr Charles Clarke, who was on board Byron's ship in 1764, says that some of them are certainly *nine feet*, if they do not exceed it. Captain Wallis on the other hand, who went out to the Straits of Magellan after By-

ron's return, found that the tallest man among them measured only 6 feet 7 inches high; several were within an inch or two as tall; but the ordinary size was from 5 feet 10. to 6 feet. All agree, however, that the hair is black, and harsh like bristles; that they are of a dark copper colour; that their features are rather handsome than ugly; that they clothe themselves with skins; that they paint themselves variously; and there is reason to suspect, that by that variety they distinguish their tribes. One remarkable observation made by our voyagers is, that the Patagians could repeat whole sentences after our men, more distinctly than almost any European foreigner of what nation soever. Another very remarkable particular is, that they had none of the characters of a ferocious people; there was no offensive weapons among them, except the scimitar, and a kind of sling, which they use in hunting, consisting of two round stones of about a pound weight each, connected together by a thong. These stones were fastened to the extremities of the thong; and, when they threw them, they held one stone in the hand, and swung the other about the head.

PATAGONS, the natives of **PATAGONIA**.

PATAGONS, a nation of Patagonia.

PATAGONULA, in botany; a genus of the monogynia order, and pentandria class of plants; in the natural method, ranking in the 41st order, *Asterifoliae*. The characters are these: the cup is an extremely small perianthium, divided into five segments, and remains after the flower is fallen; the flower consists of a single petal, with almost no tube, the margin of which is divided into five acute oval segments; the stamina are five filaments of the length of the flower; the antheræ simple; the germen of the pistil is oval and pointed; the style is slender and slightly bifid, its ramifications are also bifid; this is of the same length with the stamina, and remains when the flower is fallen; the stigmata are simple; the fruit is an oval and pointed capsule, standing on a large cup, made up of five long segments emarginated or rimmed round their edges; the seeds of this plant are yet unknown; but the construction of the cup, in which the capsule stands, is alone a sufficient distinction for this genus. There is but one species.

PAFAIA, a town of Hungary, 7 m. N. of Colozza.

PATAK, a town of Hungary, on the Latorcza, 25 m. SE. of Catehca, and 44 WSW. of Muncacz.

PATALA, or } in ancient geography, an island
PATALE, } and sea port at the mouth of
the Indus. *Plin. ii. 73. Curt. ix. 7.*

(1.) **PATAN**, a kingdom of Asia, in the East Indies, and peninsula of Malacca, on the E. coast, between the kingdoms of Siam and Paha. The inhabitants are partly Mahometans and partly Gentoos; but they are very voluptuous. The air is wholesome, though very hot; and they have no seasons but the winter and summer. The former is more properly the rainy season; and happens in our Nov. Dec. and Jan. The woods are full of elephants and wild animals. Some voyagers pretend that this country is governed by a queen, who never marries, but may have as many gallants as she pleases. They trade with the Chinese.

(2.) **PATAN**, the capital of the above kingdom, has a good harbour, and is one of the strongest cities

cities in that country. It is very little known.
 Lon. 109. 0. E. Lat. 27. 30. N.

PATAPASCO, or } a navigable river of Mary-
 PATAPASCO, } land, which rises in York
 county, Pennsylvania, and after running S. and
 SE. falls into Chesapeake Bay, 3 m. S. of Baltimore.

PATARA, the capital of Lycia, E. of the mouth
 of the Xanthus; famous for a temple and oracle
 of Apollo. (*Livy, Mela.*) For the six winter months,
 Apollo gave answers at Patara; and for the six
 summer at Delos: (*Virgil, Servius*;) these are the
Lycia Sortes of Virgil. The town was situated in a
 peninsula, called *Lyciorum Cberfonesus*. (*Stephanus.*)
 See Acts, xxi, 1.

PA-TA-RÆ-US, or } a surname of Apollo, from
 PA-TA-REUS, } PATARA. *Hor. Livy.*

PATAS, or *Caxamarquilla*, a mountainous pro-
 vince of Peru, in Truxillo, remarkable for its gold
 mines.

PATATE, a town of Peru, in Quito.

PATAVINI, the ancient inhabitants of PATA-
 VIUM, or PADUA; of whom *LIVY* was the most
 famous.

PATAVINITY, *n. f.* among critics, a peculi-
 arity of *Livy's* diction; from *Patavium*, the place
 of his nativity; but wherein this patavinity con-
 sists, they are by no means agreed. See *LIVY*,
 N° 1. In all probability, it is one of those deli-
 cacies that are lost in a dead language. *Dan.*
Georg. Morhof published a treatise *De Patavini-*
tate Liviana, at Kiel, in 1685, wherein he, explains
 the urbanity and peregrinity of the Latin tongue.

PATAVIRCA, a town of Peru, in Guarnsey,
 between Paiza and Lima; 67 miles N. of Lima.

PATAVIUM, a town of Gallia Transpadana,
 on the left or N. bank of the Medoacus Minor;
 founded by Antenor the Trojan: (*Mela, Virgil,*
Seneca.) Now called PADUA.

PATAY, a town of France, in the dep. of the
 Loiret, and late prov. of Orlannois; remarkable
 for the defeat of the English in 1429, where *JOAN*
OF ARC did wonders. It is 12 miles NNW. of
 Orleans, and 18 N. of Beaugency. Lon. 1. 43. E.
 Lat. 48. 5. N.

PATAZ, or PATAS. See PATAS.

(1.) * PATCH. *n. f.* [*pezzo*, Ital.] 1. A piece
 sewed on to cover a hole.—

Patches set upon a little breach,
 Discredit more in hiding of the flaw,
 Than did the flaw before it was to patch'd. *Shak.*

If the shoe be ript, or patches put;
 He's wounded! see the plaster on his foot.

Dryden.
 2. A piece inserted in mosaick or variegated work.

—They suffer their minds to appear in a pie-bald
 livery of coarse patches and borrowed shred. *Locke.*

3. A small spot of black silk put on the face.—
 Madam nature wears black patches too. *Cleav.*

If to every common funeral,
 By your eyes martyr'd, such grace were allow'd,
 Your face wou'd wear not patches, but a cloud.

Suckling.
 —Their patches were placed in different situations,
 as party signals to distinguish friends from foes.

Addison.
 Thrice from my trembling hand the patch-box
 fell!

Pope.
 3. A small particle; a parcel of land.—

We go to gain a little patch of ground,
 That hath in it no profit but the name. *Shak.*

5. A paltry fellow. Obsolete.—
 What a py'd ninny's this? thou scurvey patch!
Shak.

* To PATCH. *v. n.* [*puttzer*, Danish; *pezzare*,
 Italian.] 1. To cover with a piece sewed on.—
 They would think themselves miserable in a patch-
 ed coat, and yet their minds appear in a pie-bald
 livery of coarse patches and borrowed shreds.

Locke. 2. To decorate the face with small spots
 of black silk.—In the middle boxes, were several
 ladies who patched both sides of their faces. *SpeB.*

We begg'd her but to patch her face,
 She never hit one proper place. *Swift.*

3. To mend clumsily; to mend so as that the ori-
 ginal strength or beauty is lost.—

Any thing mended, is but patch'd. *Shak.*
 Patch an old building, not a new create. *Dryd.*

—Broken limbs, common prudence sends us
 to the surgeons to piece and patch up. *L'Estrange.*

4. To make up of shreds or different pieces.
 Sometimes with up emphatical.—If we seek to
 judge of those times, which the scriptures set us
 down without error, by the reigns of the Assyrian
 princes, we shall but patch up the story at adven-
 ture. *Raleigh's History.*—

His glorious end was a patched work of fate,
 Ill sort'd with a soft effeminate life. *Dryden.*

—There is that visible symmetry in a human body,
 as gives an intrinsic evidence, that it was not
 formed successively and patched up by piece-meal.

Bentley.—Enlarging an author's sense, and build-
 ing fancies of our own upon his foundation, we
 may call paraphrasing; but more properly chang-
 ing, adding, patching, piecing. *Felton.*

* PATCHER. *n. f.* from patch.] One that patch-
 es; a botcher.

* PATCHERY. *n. f.* [from patch.] Botchery;
 bungling work. Forgery. A word not in use.—

You hear him cogg, see him difemble,
 Know his grofs patchery, love him, and feed him,
 Yet remain assur'd that he's a made-up villain.

Shak.
 * PATCHWORK. *n. f.* [patch and work.] Work
 made by sewing small pieces of different colours
 interchangeably together.—When my cloaths were
 finished, they looked like patchwork. *Swift.*—

Whoever only reads to transcribe shining remarks,
 without entering into the genius and spirit of the
 author, will be apt to be misled out of the regu-
 lar way of thinking; and all the product of all this
 will be found a manifest incoherent piece of patch-
 work. *Swift.*—

Foreign her air, her robe's discordant pride
 In patchwork flutt'ring. *Pope.*

To patch-work learn'd quotations are allied,
 Both serve to make our poverty our pride.

Young.
 (1.) * PATE. *n. f.* [This is derived by *Skinner*
 from *tête*, Fr.] The head. Now commonly used
 in contempt or ridicule, but anciently in serious
 language.—

Here take thy lover's token on thy pate. *Spens.*
 By customs and covetous pates,

By gapes and opening of gates. *Tupper.*
 He is a traitor, set him to the tower,

And crop away that factious pate of his. *Shak.*
Steel

Steal by line and level is an excellent *pate* of *Shak.*

That broker that still breaks the *pate* of faith,
That daily break-vow. *Shak.*

This man's a flatterer. The learned *pate*
Ducks to the golden fool. *Shak.*

Thank your gentler fate,
That, for a bruised or broken *pate*,
Has freed you from those knobs that grow
Much harder on the married brow. *Hudibras.*

—Many will rather chafe to neglect their duty,
than to get a broken *pate* in the church's service.
South.—If any young novice happens into the
neighbourhood of flatterers, presently they are
plying his full purse and empty *pate* with addresses
suitable to his vanity. *South.*

(2.) *PATE*, in fortification, a kind of platform,
resembling what is called an *horse's shoe*.

(3.) *PATE*, in geography, an island of France, in
the Gironde, near Blaye.

* *PATED* *adj.* [from *pate*.] Having a *pate*.
It is used only in composition: as long-*pated* or
cunning; shallow-*pated* or foolish.

PATEE, *n. f.* or *PATTEE*, in heraldry, a cross,
small in the centre, and widening to the extremi-
ties, which are very broad.

* *PATEFACTION*. *n. f.* [*patefactio*, Latin.]
Act or state of opening. *Ainsworth.*

PATEHUCA, a town of Mexico, near a silver
mine. Lon. 99. 55. E. Lat. 21. 0. N.

PATELI, or *PUTALA*, a town of Thibet, in
Lassa, near a mountain, on which is seated the
temple or palace of the Grand Lama. (See *LAMA*,
Nº 1.) It is 3 miles E. of Lassa, and 272 NNW.
of Gherong.

(I.) *PATELLA*, the *KNEE-PAN*. See *ANATOMY*,
Index.

(II.) *PATELLA*, in zoology, the *LIMPET*, a genus
of insects belonging to the order of *vermes testacea*;
the animal is of the snail kind. The shells are of
that class which is called *univalves*; they have no
contour, and are in the form of little pointed cones.
They are always attached to some hard body.
Their summit is sometimes acute, sometimes
obtuse, flattened, turned back, or perforated. The
rock or other hard body to which they are always
found adhering, serves as a kind of second or under
shell to preserve them from injury; and for this
reason Aldrovandus and Rondelet have classed
them among the bivalves; but in this error they
have not been followed. The distinguishing
mark or characteristic of the *lepas* is to have but
one convex shell, which adheres by its rim to a
rock, or some other hard substance. There are
36 species of this genus, which are principally
distinguished by peculiarities in their shells. The
limpet, *fig. 1*, *Plate CCLX*. has large yellow fur-
rows and ridges from the centre to the circum-
ference, which is indented; the eye is perfectly
white, and shaped like a nipple. *Fig. 2*. Is per-
fectly smooth, but radiated with brown streaks,
and perforated in the summit. *Fig. 3*. is ribbed,
and indented at the circumference; its coat is
spotted with brown, in a zig-zag form, and its
eye is of a ruby colour. *Fig. 4*. is a small brown
shell, the ribs or striae of which are armed with
small white points. *Fig. 5*. is striated with radii,
reaching from the eye to the circumference, which

are crossed by other streaks nearly parallel to the
circumference; it is of the usual colour, and its
eye is perforated. *Fig. 6*. This is white, shaped
something like an hand-bell, and has within a pro-
tuberance resembling a clapper. *Fig. 7*. is a se-
ven-fided limpet, divided at each angle by ridges
from the summit, which form a star on a white
ground, variegated with black spots. *Fig. 8*. is a
small ribbed shell, of a brown colour and rough;
it has a chamber, and a beak-fashioned eye, plac-
ed at one of its extremities. *Fig. 9*. is the finest
shell of this species: its size, the fine mother-of-
pearl colour on the inside, and the beauty of its
red spots without, which have the appearance of
tortoise-shell, give it the pre-eminence over all
others. It is called the *Tortoise-shell buckler*. *Fabius*
Columna distinguishes 4 species of the *lepas* or
limpets:

1. *PATELLA LEPAS AGREA*, or *SYLVESTRIS*, is
a small shell, irregularly oval, of an ash colour,
marked with radii and zones crossing each other,
and perforated at the top by an aperture which
serves the fish for a vent.

2. *PATELLA LEPAS MAJOR*, or *EXOTICA*, comes
from Spain; the shell is hard, thick, and ribbed in
angles, and the rim is denticulated.

3. *PATELLA LEPAS REGALIS*, so called as be-
ing thought fit for a king's table, is of a mother-
of-pearl colour within, and is ribbed and perfora-
ted in many places: these shells have been found
on the back of the sea-tortoise, or turtle, and on
a large pinna marina.

4. *PATELLA LEPAS VULGARIS*, very common
at Naples, is of an oval figure and ash-colour.

(III.) *PATELLA*, in zoology, or entomology,
is also a name given by Lister and others to a little
husk or shell, found on the bark of the cherry,
plum, rose, and other trees, containing an animal
within, and useful in colouring. These *patellæ*
are of the form of globes, except when they ad-
here to the tree, and are for the most part of a
shining chestnut colour. The husk itself strikes a
very fine crimson colour on paper, and within it
is found a white maggot which is of no value:
this, in time, hatches into a very small but beau-
tiful bee. The size of this bee is about half that
of an ant. They have a sting like bees, and three
spots in a triangle on the forehead, supposed to be
eyes. They are black, and have a large round
whitish or pale yellow spot on the back. The
upper pair of wings are shaded and spotted, but
the under pair are clear. It might be worth while
to try whether the colour they yield might not be
useful. The deepest coloured husks afford the
finest and deepest purple: they must be used while
the animal in them is in the maggot form; for
when it is changed into the bee state the shell is
dry and colourless. Lister, who first observed
these *patellæ*, went so far on comparing them
with the common kermes, as to assert that they
were of the same nature with that production:
but his account of their being the workmanship
of a bee, to preserve her young maggot in, is not
agreeable to the true history of the kermes; for
that is an insect of a very peculiar kind. It is
possible that these *patellæ* may be the same genus
of animals with the kermes, but then it produces
its young within this shell or husk, which is no
other

other than the skin of the body of the mother animal; but as there are many flies whose worms or maggots are lodged in the bodies of other animals, perhaps this little bee may lay its egg in the body of the proper insect, and the maggot hatched from that egg, may eat up the proper progeny, and, undergoing its own natural changes there, issue out at length in form of the bee. This may have been the case in some few which Dr Lister examined; and he may have been misled by this to suppose it the natural change of the insect.

(IV.) *PATELLA FERA*, the *quail limpet*, a name very improperly applied by Rondililius, and Al-drovand to the *aures marina*, or *concha veneris*, which certainly are not of the patella kind.

* *PATEN*. *n. f.* [*patina*, Lat.] A plate. Not in use.—

The floor of heav'n

Is thick inlaid with *patens* or bright gold. *Shak.*

PATENODE, a town of Ceylon, near the E. coast, 78 miles E. of Candy.

(1.) * *PATENT*. *adj.* [*patens*, Lat. *patent*, Fr.] 1. Open to the perusal of all: as letters *patent*.—In Ireland, where the king disposes of bishopricks merely by his letters *patenti*, without any Congé d'Elire. *Leffy*. 2. Something appropriated by letters patent.—Madder, in king Charles the first's times, was made a *patent* commodity. *Mort. Hudb.*

(2.) * *PATENT*. *n. f.* A writ conferring some exclusive right or privilege.—If you are so fond over her iniquity, give her a *patent* to offend. *Shak.*—

So will I grow, so live, so die,

Ere I will yield my virgin *patent* up. *Shak.*

—We are censured as obstinate, in not complying with a royal *patent*. *Swift*.

(3.) *PATENT LEAF*, in botany, a leaf that stands almost at right angles with the stalk.

(4.) *PATENT LETTERS*. See *LETTER*, § 8.

* *PATENTEE*. *n. f.* [from *patent*.] One who has a patent.—If his tenant and *patentee* dispose of his gift, without his kingly consent, the lands shall revert to the king. *Bacon*.—In the patent granted to lord Dartmouth, the securities obliged the *patentee* to receive his money back upon every demand. *Swift*.

PATEQUEMADE, a town in the island of Cuba; 20 miles E. of Villa del Principe.

(1.) *PATER*, [Lat. *i. e.* Father.] is variously used. See § 4, 6; and *PATRES*.

(2.) *PATER*, Paul, a learned Hungarian, born at Menerdorf, in 1656; and driven from his country, when young, on account of his being a protestant. The duke of Wolfenbuttel made him his librarian, and he became professor of mathematics in the college of Dantzic; where he died in 1724. He published many works on literature and philosophy.

(3.) *PATER*, in geography. See *PEDER*.

(4.) * *PATER NOSTER*. *n. f.* [Latin.] The Lord's prayer.

(5.) *PATER NOSTER*, in geography, islands of Asia, in the East Indian sea, so called because of the great number of rocks, which sailors have likened to the beads with which the Papists tell their pater noster. They abound in corn and fruits, and are very populous.

(6.) *PATER PATRATUS*, the first and principal person in the college of heralds called *Feciales*.

Some say he was a constant officer and perpetual chief of that body; and others suppose him to have been a temporary minister, elected upon account of making peace or denouncing war, which were both done by him. See *FECIALES*.

(7.) *PATER*, ST., a town of France, in the dep. of the Sarte, 3 miles S. of Alençon.

(1.) *PATERA*, in antiquity [from *Pateo*, Lat. to be open,] a large open goblet or vessel, used by the Romans in their sacrifices; wherein they offered their consecrated meats to the gods, and wherewith they made libations. See *LIBATION*, and *SACRIFICE*. On medals the patera is seen in the hands of several deities; and often in those of princes, to mark the sacerdotal authority joined with the imperial, &c. F. Joubert observes, that besides the patera, there is frequently an altar upon which the patera seems to be pouring its contents. The patera was of gold, silver, marble, brass, glass, or earth; and they used to inclose it in urns with the ashes of the deceased, after it had served for the libation of the wine and liquors at the funeral. The patera is an ornament in architecture, frequently seen in the Doric freeze, and the tympana of arches; and they are sometimes used by themselves, to ornament a space. In this case, it is common to hang a string of huffs or drapery over them: sometimes they are much enriched with foliage, and have a mask or a head in the centre.

(2.) *PATERA*, the modern name of *PATARA*.

PATERCULUS, Caius VELLEIUS, an ancient Roman historian, who flourished in the reign of Tiberius Cæsar, was born A. U. C. 735. His ancestors were illustrious for merit and offices. His grand-father espoused the party of Tiberius Nero, the emperor's father; but being old and infirm, and not able to accompany Nero when he retired from Naples, he killed himself. His father was a soldier of rank, and so was Paterculus. He was a military tribune when Caius Cæsar, a grandson of Augustus, had an interview with the king of the Parthians, in an island of the Euphrates, in 753. He commanded the cavalry in Germany under Tiberius; and accompanied that prince for 9 years successively in all his expeditions. He received honourable rewards from him; but was preferred to no higher dignity than the prætorship. The praises he bestowed upon Sejanus make it probable that he was a friend of this favourite, and was involved in his ruin. His death is placed by Mr Dodwell in A. U. C. 784, when he was in his 50th year. He wrote an *Abridgment of the Roman History* in two books, in which many particulars are related that are nowhere else to be found; which make it the more valuable. It was first published, from the MS. of Morhac, by Rhenanus, at Basil in 1520: afterwards by Lipsius at Leyden in 1581; by Gerard Vossius in 1639; by Boeclerus at Strasburg in 1642; by Thyfius and others; and, lastly, by Peter Burman at Leyden, 1719, in 8vo. To the Oxford edition in 1693, 8vo, were prefixed the *Annales Velleiani* of Mr Dodwell, which show a great knowledge of antiquity. Lipsius censures him severely for his praising Tiberius.

PATERNA, a town of Spain, in New Castile; 3 miles E. of Alcaráz.

* *PATERNAL*. *adj.* [*paternus*, Lat. *paternal*, Fr.] 1. Fatherly;

1. Fatherly; having the relation of a father; pertaining to a father.—

I disclaim all my *paternal* care,
Propinquity and property of blood. *K. Lear.*
—Grace signifies the *paternal* favour of God to his elect children. *Hammond.*—Admonitions fraternal or *paternal* of his fellow Christians. *Hammond.*—

They spend their days in joy unblam'd; and dwell

Long time in peace, by families and tribes,
Under *paternal* rule. *Milton's Par. Lost.*

2. Hereditary; received in succession from one's father.—

Men plough with oxen of their own
Their small *paternal* field of corn. *Dryden.*

—He held his *paternal* estate from the bounty of the conqueror. *Dryden.*—

Retreat betimes

To thy *paternal* seat, the Sabine field. *Addison.*

PATERNE, ST., a town of France, in the department of Morbihan, and district of Vannes.

PATERNIAN, ST., a town of Germany, in Carinthia; 6 miles ESE. of Spital.

* PATERNITY. *n. f.* [from *paternus*, Lat. *paternus*, Fr.] Fathership; the relation of a father.

—The world, while it had scarcity of people, under no other dominion than *paternity* and eldership. *Raleigh.*—The *paternity* and filiation leave very sensible impressions. *Arbuthnot.*—This origination in the divine *paternity*, as Bishop Pearson speaks, hath anciently been looked upon as the assertion of the unity. *Waterland.*

PATERNO, a town of Sicily, in the valley of Demona, built on the ruins of the ancient Hybla; 15 miles W. of Catania. See HYBLA, N° 1.

(1.) PATERSON, the Rev. Alexander, a Scottish clergyman of uncommon abilities, born at Skipmyre, in the parish of Traillist, now annexed to that of Tinwald, in Dumfries-shire, about 1660. He not only suggested the plan of the BANK OF ENGLAND, but proposed a national object of still greater importance to Great Britain, had it been carried into execution, by the settlement of a Scottish colony at Darien. The history of that settlement, the luminous ideas conceived by Pateron, the shameful opposition it met with from a mean spirit of commercial jealousy, and the consequent destruction of the infant colony, with Sir John Dalrymple's judicious remarks on the whole infamous transaction, are inserted under the article DARIEN, N° 1. § i. 1.—3. The Rev. James Laurie, minister of Tinwald, says, Pateron was not an obscure Scotchman, as a certain writer styles him; he more than once represented Dumfries, &c. in the Scotch parliament. The same house gave birth to his grand-nephew, Dr James Mounsey, first physician for many years to the empress of Russia. The widow, who now enjoys the farm, is sister to Dr John Rodgeron, who succeeded Dr Mounsey as first physician to the empress. *Sir J. Sinclair's Stat. Acc. Vol. I. p. 165.*

(2.) PATERSON, Samuel, was born in 1725. His father died when he was very young, and his guardian failing, he lost his fortune. Being maimed, and not having been brought up to any profession, he chose that of a bookseller, in which he was unsuccessful. He then commenced auctioneer,

and after struggling with much distress, was appointed librarian to the marquiss of Lansdown. He died 20th Oct. 1802. He wrote and published, 1. *A dissertation on the equestrian figure of the George and of the Garter; by Dr Perlingall, 1753:* 2. *The travels of Caius Junior, 1767:* 3. *Janeriana, or a book of scraps:* 4. *The Templar, a weekly paper:* and, 5. *Speculations on law and lawyers.* But what rendered him chiefly famous was his talent at drawing up catalogues. The catalogues which he made of many valuable libraries, being truly *raisonnée*, sell at high prices.

(3.) PATERSON, in geography. See PATTERSON.

(1.) * PATH. *n. f.* [*path*, Saxon] Way; road; track. In conversation it is used of a narrow way to be passed on foot; but in solemn language means any passage.—For darkness, where is the place thereof,—that thou shouldst know the *paths* to the house thereof? *Job xxxviii. 20.*

On the glad earth the golden age renew,
And thy great father's *path* to heav'n pursue. *Dryd.*

The dewy *paths* of meadows we will tread.

Dryden.
—There is but one road by which to climb up, and they have a very severe law against any that enters the town by another *path*. *Addison on Italy.*

(2.) PATH, in mechanics, is the course or track marked out or run over by a body in motion.

(3.) PATHS OF THE MOON AND PLANETS. See ASTRONOMY, Index.

(1.) PATHETIC, *adj.* relating to the passions. It comes from the Greek, *πάθος*, *passion* or *emotion*. See PASSION.

(2.) PATHETIC, or } in music, something very moving, or expressive, or passionate; capable of exciting pity, compassion, anger, or other passions. The CHROMATIC genus, with its greater and lesser semitones, either ascending or descending, is very proper for the pathetic; as is also an artful management of discords; with a variety of motions, now brisk, now languishing, now swift, now slow.

(3.) * PATHETICAL. PATHETICK. *a.* [*πάθος*, *pathetique*, French.] Affecting the passions; passionate; moving.—

His page that handful of wit;
'Tis most *pathetical*. *Shak.*

—How *pathetick* is that expostulation of Job, when, for the trial of his patience, he was made to look upon himself in this deplorable condition. *Spektor.*—Tully considered the dispositions of a sincere and less mercurial nation, by dwelling on the *pathetick* part. *Swift.*—

While thus *pathetick* to the prince he spoke,
From the brave youth the streaming passion broke. *Pope.*

* PATHETICALLY. *adv.* [from *pathetick*.] In such a manner as may strike the passions.—These reasons, so *pathetically* urged and so admirably raised by the prosopopeia of nature speaking to her children with so much authority, deserve the pains I have taken. *Dryden.*

* PATHETICALNESS. *n. f.* [from *pathetick*.] Quality of being pathetick; quality of moving the passions.

(1.) PATH-HEAD, a considerable village of Scotland, in Fifeshire, and parish of Dysart; E. of, but adjacent to Kirkaldy; long famous for its manufacture

manufacture of nails. It is named from its situation, at the head of a steep ascent called the *Path*, on the side of a hill facing the Frith of Forth. It is divided into *Path-head Proper*, or *Dunkeir*, and *Sinclairton*. The latter has been mostly built within these 50 years. The total population of both, in 1792, was 2089; increase since 1755, 982. The number of houses was 320; and families 581. The nail manufacture still brings in above 1000*l.* a-year. Weaving and other manufactures are also carried on; and a fair for woollen and linen cloths is held in August.

(2.) *PATH-HEAD*, a village of Mid-Lothian, a mile S. of Dalkeith.

* *PATHLESS*. *adj.* [from *path*.] Untrodden; not marked with paths.—

Ask thou the citizens of *pathless* woods,
What cut the air with wings? *Sandys.*

Like one that had been led astray
Through the heav'n's wide *pathless* way. *Milton.*

In fortune's empire blindly thus we go,
And wander after *pathless* destiny. *Dryden.*

Through mists obscure, the wings her tedious
way,

And from the summit of a *pathless* coast
Sees infinite, and in that fight is lost. *Prior.*

(1.) * *PATHOGNOMONICK*. *adj.* [*παθονομικος*, *παθος* and *νομος*.] Such signs of a disease as are inseparable, designing the essence or real nature of a disease; not symptomatick. *Quincy.*—He has the true *pathognomonick* sign of love, jealousy. *Arbutnot.*

(2.) *PATHOGNOMONIC SIGNS*. See *MEDICINE*, *Index*.

* *PATHOLOGICAL*. *adj.* [*pathologique*, Fr. from *pathology*.] Relating to the tokens or discernible effects of a disemper.

* *PATHOLOGIST*. *n. f.* [*παθολογιστης* and *λογος*.] One who treats of pathology.

(1.) * *PATHOLOGY*. *n. f.* [*παθολογια* and *λογος*.] *pathologie*, Fr.] That part of medicine which relates to the disempers, with their differences, causes, and effects, incident to the human body. *Quincy.*

(2.) *PATHOLOGY*. See *MEDICINE*.
PATHOS, [Gr. *πάθος*,] literally signifies passion, and in poetry is applied to the expression of passion.

PATHRI. See *PARTHIA*, § 3.

PATHROS, a city and canton of Egypt, which the prophets Jeremiah and Ezekiel mention; Jer. div. 1. 85. Ezek. xlix. 14. xxx. 14. We are uncertain of its situation. Pliny and Ptolemy call it *PHATURIS*; and it appears to have been in Upper Egypt. Isaiah (xii. 2.) calls it *Pathros*; and it is the country of the *Pathrusim*, the posterity of Mizraim, mentioned by Moses, Gen. x. 14. Ezekiel threatens them with an entire ruin. The Jews retired thither, notwithstanding the remonstrances of Jeremiah; but Isaiah foretold their ruin.

PATHRUSIM, a son of Mizraim, supposed to be the progenitor of the *Parthians*. See *PARTHIA*, § 3.

* *PATHWAY*. *n. f.* [*path* and *way*.] A road; a common acceptation, a narrow way to be passed on foot.—

Alas, that love, whose view is muffled still,
Should without eyes see *pathways* to his ill. *Shak.*

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—In the way of righteousness is life, and in the *pathway* thereof there is no death. *Prov.* xii. 28.—

When in the middle *pathway* basks the snake;

O lead me, guard me from the sultry hours.

Gay.

PATI. See *PATTA*, and *PATTI*.

* *PATIBLE*. *adj.* [from *patior*, Lat.] Sufferable; tolerable. *Dis.*

* *PATIBULARY*. *adj.* [*patibulaire*, Fr. from *patibulum*, Latin.] Belonging to the gallows. *Dis.*

(1.) * *PATIENCE*. *n. f.* [*patience*, French; *patientia*, Latin.] 1. The power of suffering; calm endurance of pain or labour.—

Devotion, *patience*, courage, fortitude;

I have no relish of them. *Shak.*

—Christian fortitude and *patience* have their opportunity in times of affliction and persecution. *Spratt.*—

Patience of toil, and love of virtue fails.

Prior.

2. The quality of expecting long without rage or discontent; long suffering.—Necessary *patience* in seeking the Lord is better than he that leadeth his life without a guide. *Eccles.* xx. 32.—Have *patience* with me, and I will pay thee all. *Matthew.* 3. Perseverance; continuance of labour.—

He learnt with *patience*, and with meekness taught. *Harte.*

4. The quality of bearing offences without revenge or anger.—

His rage was kindled, and his *patience* gone.

Harte.

5. Sufferance; permission.—By their *patience*, the apostles preached as well when they wrote, as when they spake the gospel. *Hooker.* 6. An herb. A species of dock.—*Patience*, an herb, makes a good boiled salad. *Mortimer.*

(2.) *PATIENCE* is that calm and unruffled temper with which a good man bears the evils of life, from a conviction that they are at least permitted, if not sent, by the best of Beings, who makes all things work together for good to those who love and fear him.

(3.) *PATIENCE*, in botany (§ 1. *def.* 6.) See *RUMEX*, N^o 4.

(4.) *PATIENCE*, in geography, an island near Rhode Island, in Narraganset Bay, SE. of Warwick Neck; 2 miles long, and 1 broad.

(1.) * *PATIENT*. *adj.* [*patient*, Fr. *patiens*, Lat.]

1. Having the quality of enduring: with *of* before the thing endured.—To this outward structure was joined strength of constitution, *patient* of severest toil and hardship. *Fell.*—Wheat, which is the best sort of grain, of which the purest bread is made, is *patient* of heat and cold. *Ray.* 2. Calm under pain or affliction.—

Be *patient*, and I will stay. *Shak.*

Grieved, but unmov'd, and *patient* of your scorn,

I die. *Dryden.*

3. Not revengeful against injuries. 4. Not easily provoked.—Be *patient* toward all men. 1 *Thess.* v. 14. 5. Persevering; calmly diligent.—Whatever I have done is due to *patient* thought. *Newton.*

6. Not hasty; not viciously eager or impetuous.—

N

Not

Not *patient* to expect the turns of fate,

They open'd camps.

Prior.

(2.) * *PATIENT. n. f.* [*patient, Fr.*] 1. That which receives impressions from external agents.—Malice is a passion so impetuous and precipitate, that it often involves the agent and the patient. *Gov. of the Tongue.*—

To proper *patients* he kind agents brings.

Creech.

—When a smith with a hammer strikes a piece of iron, the iron is the *patient* or the subject of passion, in a philosophical sense, because it receives the operation of the agent. *Watts.* 2. A person diseased. It is commonly used of the relation between the sick and the physician.—You deal with me like a physician, that seeing his *patient* in a pestilent fever, should chide instead of administering help. *Sidney.*—Through ignorance of the disease, instead of good, he worketh hurt, and out of one evil throweth the *patient* into many miseries. *Spenser.*—A physician uses various methods for the recovery of sick persons; and though all of them are disagreeable, his *patients* are never angry. *Aldison.* 3. It is sometimes, but rarely, used absolutely for a sick person.—

The poor *patient* will as soon be found

On the hard matress.

Dryden.

—It is wonderful to observe, how inapprehensive these *patients* are of their disease. *Blackmore.*

* To *PATIENT. v. a.* [*patienter, Fr.*] To compose one's self; to behave with patience. *Oblole.*—

Patient yourself, madam, and pardon me.

Shak.

* *PATIENTLY. adv.* [from *patient.*] 1. Without rage under pain or affliction.—

Lament not, Eve, but *patiently* resign

What justly thou hast lost.

Milton.

Ned is in the gout,

Lies rack'd with pain, and you without;

How *patiently* you hear him groan!

How glad the case is not your own! *Swift.*

2. Without vicious impetuosity; with calm diligence.—That which they grant, we gladly accept at their hands, and wish that *patiently* they would examine how little cause they have to deny that which as yet they grant not. *Hooker.*—Could men but once be persuaded *patiently* to attend to the dictates of their own minds, religion would gain more profelytes. *Calamy.*

PATIGUMO. n. f. (a corruption of the words *pate de guimauve*), a sort of paste or cakes much used on the continent, as an agreeable and useful remedy for catarrhal disfluxions, and supposed by Dr Percival to consist of gum-arabic combined with sugar and the whites of eggs. But it is said that the powdered substance of the marsh-mallow is the chief ingredient of the composition. The Dr recommends it as an antidote against HUNGER. His receipt is this: "Fine sugar 4 oz. gum-arabic, 1 oz. rose water, half an ounce; white of eggs, q. s."

(1.) *PATIN*, Guy, professor, of physick in the royal college of Paris, was born in 1602. He made his way into the world merely by the force of his genius, being at first corrector of a printing house. He died in 1672, and his letters, which

appeared after his death, have rendered his name famous.

(2.) *PATIN*, Charles, M. D. the son of Guy, made a great figure in the world, and excelled in the knowledge of medals. He was born in Paris in 1633. He studied physick, took his degrees, and practised with great success. In 1676, he was appointed professor of physick in Padua; and in 1679 was created a knight of St Mark. He died in that city in 1694. His works are numerous. His wife too, and his daughters, were authoresses.

(3.) *PATIN, or) n. f. ÆRUGO, or the green*
(1.) *PATINA.* } rust of copper, so much valued by antiquarians, as an evidence of the genuineness of ancient copper coins. See *CHEMISTRY. Index*; and *COPPER*, § XII. Instead of corroding the metal, as the rust of iron does, patina is the best preservative of ancient copper coins. It is produced by age alone.

(2.) *PATINA*, in painting, is applied to a similar change, which takes place upon ancient paintings. See *PAINTING, Part I, Sec. V.*

* *PATINE. n. f.* [*patina, Lat.*] The cover of a chalice. *Ainsl.*

PATIVILCA, a town of Peru, in Santa.

PATIZITHES, one of the Persian Magi, whose brother having a strong resemblance to Smerdis, the 2d son of Cyrus the Great, he raised him to the throne on the death of Cambyses, pretending that he was prince Smerdis. See *PERSIA. Herodot.* iii, c. 61.

PATKUL, John Reinhold, Count, a brave and accomplished nobleman, born in Livonia. He was employed to represent the grievances of that province to Charles XI. of Sweden; which he did with such intrepidity and freedom, that the king professed to esteem him for it. But, being in reality highly incensed against him, he caused him to be prosecuted for high treason; when he was condemned to lose his right hand and his head. Patkul, however, escaped, and entered into the service of Peter the Great; but, while acting as the Czar's ambassador to Augustus, K. of Poland, whom he had formerly served, was most ungratefully delivered up a prisoner, by that monarch, to Charles XII.; who caused him to be broken alive on the wheel, with every circumstance of ignominy and aggravated cruelty, on the 30th Sept. 1707.

* *PATLY. adv.* [from *pat.*] Commodiously; fitly.

(1.) *PATMOS*, in ancient geography, one of the *SPORADES*, 30 miles in compass, according to Dionysius and Pliny. It was rendered famous by the exile of St John, and the Revelation showed him there. Most of interpreters think St John wrote them in the same place during his exile. Patmos lies between the island of Icaria and the promontory of Miletus. It is now called *Patino*, *Paßino*, *Patmoh*, or *Palmosa*. Its circuit is about 30 miles. It belongs to the Turks. It is considerable for its harbours; but the inhabitants have been obliged by the pirates to quit the capital, and retire to a hill on which St John's convent stands. This convent is a citadel consisting of several irregular towers, and is a substantial building.

ing seated on a very steep rock. The island is very barren, and without wood; but abounds with partridges, rabbits, quails, turtles, pigeons, and snipes. Their corn does not amount to 1000 barrels in a year. In the whole island there are scarce 300 men; but there are above 20 women to one man. To the memory of St John is an hermitage on the side of a mountain, where there is a chapel not above 8 paces long, and 5 broad.

(2.) **PATMOS**, the capital of the above island. It has a harbour, and some monasteries of Greek Monks. Lon. 26. 24. E. Lat. 37. 14. N.

PATNA, a town of Indostan, in the dominions of the Great Mogul, N. of Bengal, where the English have factories for saltpetre, borax, and raw silk. It is the capital of Bahar, a dependency of Bengal, and is situated in a pleasant country, 400 miles E. of Agra. It is 7 miles long, on the banks of the Ganges, and about half a mile broad. Mr Rennel gives strong reasons for supposing it to be the ancient **PALIBOTHA**. The town is large and populous, but the houses are distant from each other. Lon. 85. 40. E. Lat. 45. 25. N.

PATOECE. See **PATÆCI**.

PATOMA, a river of Russia, which runs into the Lena; in Lon. 134. 10. E. of Ferro. Lat. 59. 53. N.

PATOMACK, a large river of North America, in Virginia, which rises in the Alleghany mountains, separates Virginia from Maryland, and falls into Chesapeake bay. It is about 7 miles broad, and is navigable for near 100 miles.

PATONCE, or **POTENCE**, *n. f.* in heraldry, is a cross, flory at the ends; from which it differs only in this, that the ends, instead of turning down like a fleur-de-lis, are extended somewhat in the pattee form. See **FLORY**.

PATONG, a town of China, of the 3d rank, in Hou-quang, on the Yang-tse; 15 miles WNW. of Koue.

PATQUASHAGAMA, a lake of Canada; 450 miles W. of Quebec.

PATRÆ, a city of Achaia, at the NW. of Peloponnesus, anciently called *Aroe*. It was visited by Dr Chandler, who gives the following account of it. "It has been often attacked by enemies, taken, and pillaged. It is a considerable town, at a distance from the sea, situated on the side of a hill, which has its summit crowned with a ruinous castle. This made a brave defence in 1447 against Sultan Morat, and held out until the peace was concluded, which first rendered the Morea tributary to the Turks. A dry lake before it was once the port, which has been choked with mud. It has now, as in the time of Strabo, only an indifferent road for vessels. It is a place of some trade, and is inhabited by Jews, Turks, and Greeks. The latter have several churches. One is dedicated to St Andrew, who suffered martyrdom there. It had been recently repaired. The *sir* by the sea is supposed that of the temple of Ceres; by it is a fountain. The air is bad, and the country round about over-run with the *glycyrrhiza* or liquorice. Patræ assisted the Ætolians when invaded by the Gauls under Brennus; but afterwards was reduced to extreme poverty, and almost abandoned. Augustus reunited the

scattered citizens, and made it a Roman colony, settling a portion of the troops which obtained the victory of Actium, with other inhabitants from the adjacent places. Patræ re flourished and enjoyed dominion over Naupactus, Ælanthes, and several cities of Achaia. In the time of Pausanias, it was adorned with temples and porticoes, a theatre, and an odæum which was superior to any in Greece, but that of Atticus Herodes at Athens.

In the lower part of the city was a temple of Bacchus Æsymnetes, in which was an image preserved in a chest, and conveyed from Troy by Eurypylos. By the port were temples; and by the sea, one of Ceres, with a pleasant grove and a prophetic fountain of *unerring veracity* in determining the event of any illness. After supplicating the goddess with incense, the sick person appeared, dead or living, in a mirror suspended so as to touch the surface of the water. In the citadel of Patræ was a temple of Diana Laphria, with her statue in the habit of a huntress, of ivory and gold, given by Augustus Cæsar, when he laid waste Calydon and the cities of Ætolia to people Nicopolis. The Patrensiens honoured her with a yearly festival, which is described by Pausanias who was a spectator. They formed a circle round the altar with pieces of green wood, each 16 cubits long, and within heaped dry fuel. The solemnity began with a most magnificent procession, which was closed by the virgin priestesses in a chariot drawn by stags. On the following day, the city and private persons offered at the altar fruits, and birds, and all kinds of victims, wild boars, stags, deer, young wolves, and beasts full grown; after which, the fire was kindled. It was not remembered that any wound had ever been received at this ceremony, though the spectacle and sacrifice were as dangerous as savage. The number of women at Patræ was double that of the men. They were employed chiefly in a manufacture of flax which grew in Elis, weaving garments, and attire for the head."

PATRANA. See **PASTRANA**.

PATRAS, an ancient and flourishing town of European Turkey, in the Morea, capital of a duchy, with a Greek archbishop's see. It is pretty large and populous; and the Jews, who are one 3d part of the inhabitants, have four synagogues. There are several handsome mosques and Greek churches. The Jews carry on a great trade in silk, leather, honey, wax, and cheese. There are cypress trees of a prodigious height, and excellent pomegranates, citrons, and oranges. It has been several times taken and retaken, and is now in the hands of the Turks. It is seated in Lon. 21. 45. E. Lat. 38. 17. N.

PATRÉS CONSCRIPTI. See **CONSCRIPT** and **SENATOR**.

PATRIA, a town and lake of Naples, in Lavora; 13 miles NW. of Naples.

(1.) * **PATRIARCH**. *n. f.* [*patriarche*, French; *patriarcha*, Latin.] 1. One who governs by paternal right; the father and ruler of a family.—

So speak the patriarch of mankind. *Milton.*

The monarch oak, the patriarch of the trees,
Shoots rising up. *Dryden.*

2. A bishop superior to archbishops.—The patriarchs for 100 years had been of one house. *Ra-*

leigh.—Where secular primates were heretofore given, the ecclesiastical laws have ordered *patriarchs* and ecclesiastical primates to be placed.

Ayliffe.

(2.) **PATRIARCH**, } one of those first fathers
(2.) **PATRIARCHA**, } who lived towards the beginning of the world, and who became famous by their long lines of descendants. Abraham, Isaac, and Jacob, and his 12 sons, are the patriarchs of the Old Testament; Adam, Seth, Enoch, &c. were antediluvian patriarchs. See **ANTEDILUVIANS**. The authority of patriarchal government existed in the fathers of families, and their first-born after them, exercising all kinds of ecclesiastical and civil authority in their respective households; and to this government, which lasted till the time of the Israelites dwelling in Egypt, some have ascribed an absolute and despotic power, extending even to the punishment by death.

(3.) **PATRIARCHS**, among Christians, are ecclesiastical dignitaries, or bishops, so called from their paternal authority in the church. The power of patriarchs was not the same in all, but differed according to the customs of countries, or the pleasure of kings and councils. Thus the patriarch of Constantinople grew to be a patriarch over the patriarchs of Ephesus and Caesarea, and was called the *ecumenical and universal patriarch*; and the patriarch of Alexandria had some prerogatives which no other patriarch but himself enjoyed, such as the right of consecrating and approving every single bishop under his jurisdiction. The patriarchate has been ever esteemed the supreme dignity in the church: the bishop had only under him the territory of the city of which he was bishop: the metropolitan superintended a province, and had for suffragans the bishop of his province; the primate was the chief of what was then called a *diocese*, and had several metropolitans under him; and the patriarch had under him several dioceses, composing one exarchate, and the primates themselves were under him. Usher, Payi, De Marca, and Morinus, attribute the establishment of the grand patriarchates to the apostles themselves; who, in their opinion, pitched on the three principal cities in the three parts of the known world; viz. Rome in Europe, Antioch in Asia, and Alexandria in Africa: and thus formed a trinity of patriarchs. Others maintain that the name patriarch was unknown at the time of the council of Nice; and that long afterwards patriarchs and primates were confounded together, as being all equally chiefs of dioceses, and superior to metropolitans, who were only chiefs of provinces. Hence Socrates gives the title patriarch to all the chiefs of dioceses, and reckons ten of them. It does not appear that the dignity of patriarch was appropriated to the five grand sees of Rome, Constantinople, Alexandria, Antioch, and Jerusalem, till after the council of Chalcedon in 451; for when the council of Nice regulated the limits and prerogatives of the three patriarchs of Rome, Antioch, and Alexandria, it did not give them the title of patriarchs, though it allowed them the pre-eminence and privileges thereof. Nor is the term *patriarch* found in the decree of the council of Chalcedon, whereby the 5th place is assigned to the bishop of Jerusalem; nor did these five pa-

triarchs govern all the churches. There were besides many independent chiefs of dioceses, who, far from owning the jurisdiction of the grand patriarchs, called themselves *patriarchs*; such as that of Aquileia; nor was Carthage ever subject to the patriarch of Alexandria. Mosheim imagines that the bishops, who enjoyed a certain degree of pre-eminence over the rest of their order, were distinguished by the Jewish title of patriarchs in the fourth century. The authority of the patriarchs gradually increased, till, about the close of the fifth century, all affairs of moment within their patriarchate came before them. They consecrated bishops; assembled yearly in council the clergy of their respective districts; pronounced a decisive judgment in those cases where accusations were brought against bishops; and appointed vicars or deputies, clothed with their authority, for the preservation of order in the remote provinces. In short, nothing was done without consulting them; and their decrees were executed with the same respect as those of the princes. But the authority of the patriarchs was not acknowledged through all the provinces. Several districts, both in the eastern and western empires, were exempted from their jurisdiction. The Latin church had no patriarchs till the 6th century; and the churches of Gaul, Britain, &c. were never subject to the authority of any patriarch. There was no primacy, no archiepiscopate, no patriarchate, owned here; but the bishops, with the metropolitans, governed the church in common. Du Cange says, that some abbots have born the title of patriarchs.

(4.) **PATRIARCHS, JEWISH**, a dignity, respecting the origin of which there is a variety of opinions. The learned authors of the universal History think, that the first appearance and institution of those patriarchs happened under Nerva the successor of Domitian. It seems probable that the patriarchs were of the Aaronic or Levitical race; the tribe of Judah being at that time too much depressed, and too obnoxious to the Romans to be able to assume any external power. But of whatever tribe they were, their authority came to be very considerable. Their principal business was to instruct the people; and for this purpose they instituted schools in several cities. And having gained great reputation for their extraordinary learning, zeal, and piety, they might, in time, not only bring a great concourse of other Jews from other parts, as from Egypt and other western provinces of their dispersion, but likewise prove the means of their patriarchal authority being acknowledged there. From them they ventured at length to levy a kind of tribute, to defray the charges of their dignity, and of the *Apsoliti*, or *Legati*, under them, whose business it was to carry their orders and decisions through the other provinces of their dispersion, and to see them punctually executed by all, that some shadow of union might be kept up among the western Jews. They likewise nominated the doctors who were to preside over their schools and academies; and these were in process of time styled *chiefs* and *princes*, in order to raise the credit of that dignity, or to imply the great regard which their disciples were to pay to them. These chiefs became at length rivals of the patriarchs, and some of them possessed both dignities at once.

an usurpation which caused not only great confusion amongst them, but, oftentimes violent and bloody contests. However, the Jewish Rabbis have trumped up a much older era for this patriarchal dignity, and have given us a succession of them down to the fifth century, in which it was abolished. According to them, the first patriarch was Hillel, surnamed the *Babylonian*, because he was sent for from Babylon to Jerusalem about 100 years before the ruin of their capital, or 30 before the birth of Christ, to decide a dispute about the keeping of Easter, which on that year fell out on the Sabbath day; and it was on account of his wife's decision that he was raised to that dignity, which continued in his family till the fifth century. He was likewise looked upon as a second Moses, because he lived like him 40 years in obscurity, 40 more in great reputation for learning and sanctity, and 40 more in possession of this patriarchal dignity. They make him little inferior to that lawgiver in other of his excellencies, as well as in the great authority he gained over the whole Jewish nation. The wonder is, how Herod the Great, who was so jealous of his power, could suffer a stranger to be raised to such a height of it, barely for having decided a dispute of little importance. Hillel was succeeded by his son Simeon, whom many Christians pretend to have been the venerable old person of that name, who received the divine infant in his arms. The Jews give him but a very obscure patriarchate; though the Christian authors make him chief of the sanhedrim; and Epiphanius says, that the priestly tribe hated him so much for giving so ample a testimony to the divine child, that they denied him common burial. But it is hardly credible, that St Luke should have so carelessly passed over his two-fold dignity, if he had been really possessed of them. He was succeeded by Jochanan, not in right of descent, but of his extraordinary merit, which the Rabbis describe in terms of the most extravagant hyperboles. He enjoyed his dignity but two years, or at most 5 years, and is said to have foretold to Titus, that he was ordained to destroy the temple; on which account they pretend that general gave him leave to remove the sanhedrim to Japhne. The Jewish writers add, that he erected an academy there, which subsisted till the death of Akiba; was the seat of the patriarch; and consisted of 300 schools; and another at Lydda, near Japhne, and where the famed St George is buried. He lived 120 years and being asked, what he had done to prolong his life? he gave this answer; "I have taken care to celebrate all festivals; and my mother even sold my head ornaments to buy wine to make me merry on such days; and left me at her death 300 hog's-heads of it, to sanctify the Sabbath!"—The doctors that flourished in his time were no less considerable, particularly the famed Rabbi Chanina of whom the Bath Col was heard to say, that the world was preserved for the sake of him; and R. Nicodemus, who, they pretend, stopped the course of the sun, like Joshua. He was succeeded by Gamaliel, a man of unsufferable pride; and yet of so universal authority over all the Jews, not only in the west, but over the whole world, that the very monarchs suffered his laws to be obeyed

in their dominions. In his days flourished Samuel the Lefi, who composed a prayer full of the bitterest curies against heretics, by which they mean the Christians; and which are still in use. Gamaliel was no less an enemy to them; and yet both have been challenged, the former as the celebrated master of our great apostle, the other as his disciple in his unconverted state. Simon II. his son and successor, was the first martyr who died during the siege of Jerusalem. The people so regretted his death, that an order was given, instead of 10 bumpers of wine, which were usually drank at the funeral of a saint, to drink 13 at his, on account of his martyrdom. These are the patriarchs, who, the Rabbis tell us, preceded the destruction of the temple; and we need no farther confutation of this pretended dignity, than the silence of the sacred historians, who not only make not the least mention of it, but assure us all along that they were the high priests who presided in the sanhedrim; and before whom all cases relating to the Jewish religion were brought and decided. It was the high-priest who condemned our Saviour and St Stephen; who forbade the apostles to preach in Christ's name; and who sat as judge on St Paul. The same may be urged from Josephus, who must have known and mentioned this pretended dignity, if any such there had been; and yet is so far from taking the least notice of it, that he places the pontiffs alone at the head of all the Jewish affairs; and names the high-priest Ananus as having the care and direction of the war against the Romans;—which is an evident proof that there were then no such patriarchs in being. If there had been any such remarkable succession, the Talmudists would have preserved it; whereas, neither they, nor any of the ancient authors of the Jewish church, make any mention of it; but only some of their doctors, who have written a considerable time after them, to whom little credit can be given, as there are such unsurmountable contradictions between them, as no authors either Jewish or Christian have been able to reconcile. Their succession, according to those rabbies, stands as follows: 1. Hillel the Babylonian. 2. Simeon the son of Hillel. 3. Gamaliel the son of Simeon. 4. Simeon II. the son of Gamaliel. 5. Gamaliel II. the son of Simeon II. 6. Simeon III. the son of Gamaliel II. 7. Judah the son of Simeon III. 8. Gamaliel III. the son of Judah. 9. Judah II. the son of Gamaliel III. 10. Hillel II. the son of Judah II. 11. Judah III. the son of Hillel II. 12. Hillel III. the son of Judah III. 13. Gamaliel IV. the son of Hillel III. But Gants Tzemach David hath reduced them to 10. On the whole, it cannot be doubted but that their first rise was in Nerva's time, however much Jewish pride may have prompted them to assert their origin to have been more ancient than it really was. They have also exaggerated their power beyond all bounds, for the purpose of repelling the arguments of Christians. In time however, they certainly imposed upon the people; and what power they did possess (which the Romans only allowed to be in religious matters, or in such as were connected with religion) they exercised with great rigour. Their pecuniary demands became very exorbitant; and was the cause of their suppression in the year 429.

(1.) * PATRIARCHAL.

(1.) * **PATRIARCHAL**. *adj.* [*patriarchal*, Fr. from *patriarch*.] 1. Belonging to patriarchs; such as was possessed or enjoyed by patriarchs.—

Such drowsy sedentary souls have they,

Who would to *patriarchal* years live on. *Norris*.

—Nimrod enjoyed this *patriarchal* power; but he against right enlarged his empire. *Locke*. 2. Belonging to hierarchical patriarchs.—Archbishops or metropolitans in France are immediately subject to the pope's jurisdiction; and, in other places, they are immediately subject to the *patriarchal* sees. *Ayliffe*.

(2.) **PATRIARCHAL CROSS**, in heraldry, is that where the shaft is twice crossed; the lower arms being lower than the upper ones.

* **PATRIARCHATE**. *n. f.* [*patriarchat*, Fr.

* **PATRIARCHSHIP**. *f.* from *patriarch*.] A bishopric superior to archbishoprics.—The questions are as ancient as the differences between Rome and any other of the old *patriarchates*. *Selden*.—Prelacies may be termed the greater benefices; as that of the pontificate, a *patriarchship* and archbishopric. *Ayliffe*.

* **PATRIARCHY**. *n. f.* Jurisdiction of a patriarch; patriarchate.—Calabria pertained to the patriarch of Constantiople, as appeareth in the novel of Leo Sophus, touching the precedence of metropolitans belonging to that *patriarchy*. *Brerewood*.

PATRICA, a town of Italy, in the territory of the Church, and Campagna of Rome, towards the sea-coast, 8 miles E. of Ostia, and 13 S. of Rome. About a mile from it is a hill called *Monte de Lirana*, which some have thought to be the site of the ancient Lavinium, founded by Æneas.

(1.) * **PATRICIAN**. *adj.* [*patricien*, Fr. *patricius*, Lat.] Senatorial; noble; not plebeian.—

Th' insulting tyrant prancing o'er the field,
His horses' hoofs wet with *patrician* blood.

Addison.

(2.) * **PATRICIAN**. *n. f.* A nobleman.—

Noble *patricians*, patrons of my right,
Defend the justice of my cause with arms. *Shak*.

You'll find Gracchus, from *patrician* grown

A fencer and the scandal of the town. *Dryd*.

—Your daughters are all married to wealthy *patricians*. *Swift*.

(3.) **PATRICIAN**, was a title given, among the ancient Romans, to the descendants of the 100 or 100 first senators chosen by Romulus; and by him called *patres*, *fathers*. Romulus established this order after the example of the Athenians; who were divided into two classes, viz. the *patricians*, *patricios*, and *plebeians*, *populares*. *Patricians*, therefore, were originally the nobility; in opposition to the *plebeians*. They were the only persons whom Romulus allowed to aspire to the magistracy; and they exercised all the functions of the priesthood till A.U.C. 495. But the cognizance and character of these ancient families being almost lost by a long course of years, and frequent changes in the empire, a new kind of *patricians* were afterwards set on foot, who had no pretensions from birth, but whose title depended entirely on the emperor's favour. This new *patriciate*, *Zozimus* tells us, was erected by Constantine, who conferred the quality on his counsellors, not because they were descended from the ancient fathers

of the senate, but because they were the fathers of the republic or of the empire. This dignity in time became the highest of the empire. Justinian calls it *summam dignitatem*. In effect, the *patricians* seem to have had the precedence of the *consulares*, and to have taken place before them in the senate; though F. Faber asserts the contrary. What confounds the question is, that the two dignities often met in the same person; because the *patriciate* was only conferred on those who had gone through the first offices of the empire, or had been *consuls*. Pope Adrian made Charlemagne take the title of *patrician* before he assumed the quality of emperor; and other popes have given the title to other kings and princes.

(4.) **PATRICIAN** was also a title of honour often conferred on men of the first quality in England, in the time of the Anglo Saxon kings. See *THANE*.

(5.) **PATRICIAN DEITIES**, **PATRICII DEI**, in mythology, were Janus, Saturn, the Genius, Pluto, Bacchus, the Sun, the Moon, and the Earth.

(6.) **PATRICIANS**, in ecclesiastical writers, were ancient sectaries, who disturbed the peace of the church in the beginning of the third century: thus called from their founder **PATRICIUS**, preceptor of a Marcionite called *Symmachus*. His distinguishing tenet was, that the substance of the flesh is not the work of God, but that of the devil; on which account his adherents bore an implacable hatred to their own flesh; which sometimes carried them so far as to kill themselves. They were also called **TATIANITES**, and made a branch of the **ENCRATITE**.

PATRICII DEI. See **PATRICIAN**. § 5.

PATRICIUS. See **PATRICIAN**, § 6: and **PATRICK**. N^o 3.

(1.) **PATRICK**, Peter, a native of Thessalonica, who was sent by the emp. Justinian I. ambassador to Amalasuntha, Q. of the Goths; A. D. 534; and in 550 to Chosroes. K. of Persia, to conclude a peace. On his return he was appointed mayor of the palace. He wrote a work entitled, *The History of Ambassadors*, part of which is extant, and was published in the *Collection of Byzantine Historians*; in 1648, folio.

(2.) **PATRICK**, Simon, D. D. a very learned English bishop, born at Gainsborough in Lincolnshire in 1626. In 1644 he was admitted into Queen's college, Cambridge, and entered into holy orders. After being for some time chaplain to Sir Walter, St John, and vicar of Battersea, in Surry, he was made rector of St Paul's, Covent-garden, London. In 1678 he was made dean of Peterborough where he was much beloved. During the reign of K. James II. he boldly preached and wrote against the church of Rome. In 1689 he was appointed Bp. of Chichester, and was employed with others of the new bishops to settle the affairs of the church in Ireland. In 1691 he was translated to the see of Ely: He died in 1707, after having published various works; among which the most distinguished are, *Paraphrases and Commentaries on the Holy Scriptures*, 3 vols. fol. 2. *Tracts against popery*; 3. *Sermons*; 4. *History of the Church of Peterborough*.

(3.) **PATRICK**, St, the apostle of Ireland, and 2d bishop of that country. He was born April 5th A. D. 373, of a good family, at Kirk-Patrick, near

St. Dumbarton, now in Scotland, but then comprehended under Britain.—His baptismal name, *Sweath*, signifies, in the British language, *valiant in war*. On some inroad of certain exiles from Ireland, he was taken prisoner, and carried into that kingdom, where he continued six years in the service of Milcho, who had bought him, when Patrick acquired the new name of *Cothraig*, or *Cathur-Tigh*, i. e. *four families*. In this time he made himself master of the Irish language, and at last made his escape, and returned home on board a ship. About two years after, he formed a design of converting the Irish, either in consequence of a dream, or of what he had observed during his acquaintance with them. To qualify himself for this, he travelled to the continent, where he continued 35 years, pursuing his studies under his mother's uncle, St. Martin, bishop of Tours, who had ordained him deacon; and after his death with St. German, bishop of Auxerre, who ordained him priest, and gave him his 3d name, *Mauin* or *Maginnin*. Pope Celestine consecrated him bishop, and gave him his most familiar name, *Patricius*, expressive of his honourable descent, and to give lustre and weight to the commission which he now charged him with to convert the Irish. Palladius had been there a year before him, but with little success: the saints Kieran, Ailbe, Declan, and Ibar were there before them both. But the great office of apostle of Ireland was reserved for Patrick, who landed in the country of the Eborlein, or at Wicklow, A. D. 441. His first convert was Sinell, the 8th in descent from Cormac king of Leinster. He then proceeded to Dublin, and thence to Ulster, where he founded a church (afterwards the famous abbey of Saul, in the county of Down), remarkable for its position, and being made out of a barn. After labouring 7 years indefatigably in his great work, he returned to Britain, which he delivered from the heresies of Pelagius and Arius; engaged several eminent persons to assist him; visited the Isle of Man, which he converted in 440, when the bishopric was founded; and A. D. 448, returned to the see of Armagh, which he had founded in 445; and in 13 years more completed the conversion of the whole island. After giving an account of his commission at Rome, he once more returned to Ireland, and spent the remainder of his life between the monasteries of Armagh and Saul, superintending and enforcing the doctrine and discipline which he had established. After having established schools, or an academy, he died at Saul abbey, aged 120, March 17, A. D. 493, and was buried at Down afterwards, in the same grave with St. Bridget and St. Columb. His genuine works were collected and printed by Sir James Ware, 1656. His immediate successor in this see was St. Binnin or Begnus.

(4.) **PATRICK, ST. ORDER OF**, an institution which took place in Ireland in 1783. On the 5th of Feb. 1781, the king ordered letters patent to be passed under the great seal of the kingdom of Ireland, for creating a society or brotherhood, to be called *knights of the illustrious order of St. Patrick*, of which his majesty, his heirs, and successors, shall perpetually be sovereigns, and his majesty's lieutenant-general and general governor of Ireland, &c. for the time being, shall officiate as grand-masters;

and also for appointing Prince Edward, and several of the prime nobility of Ireland, knights companions of the said illustrious order.

PATRICK'S EA, or ISLE. See **BATTERSEA**.

PATRICK'S ISLE, ST., an island of Ireland, on the coast of Dublin, opposite Balrudeary.

(1.) **PATRICK'S, ST.**, a town of Ireland, in the county of Waterford, and province of Munster.

(2.) **PATRICK'S, ST.**, a town of Georgia, capital of Camden county, seated on the Great Satilla, 32 miles above its mouth.

PATRICK'S WELL, ST., a town of Ireland, in the county of Limerick, and province of Munster.

PATRIMONIA, a town of Corsica, 4 miles W. of Bastia.

* **PATRIMONIAL.** *adj.* [*patrimonial*, Fr. from *patrimony*] Possessed by inheritance.—The expense of the duke of Ormond's own great *patrimonial* estate, that came over at that time, is of no small consideration in the stock of this kingdom. *Temple*.—

Their *patrimonial* loth the Spaniards keep.

Dryden.

* **PATRIMONIALLY.** *adv.* [from *patrimonial*.] By inheritance.—Good princes have not only made a distinction between what was their own *patrimonially*, as the civil law books term it, and what the state had an interest in. *Davenant*.

PATRIMONIO, or ST. PETER'S PATRIMONY, a province of Italy, in the Pope's dominions; so called, because it was granted by the emperor Constantine to support a church which he built in honour of St. Peter, and for the use of the Pope. It is bounded on the N. by Orvietano and part of Umbria; E. by Sabina and Campagna di Roma; SW. by the Mediterranean; and NW. by the duchy of Castro. It is about 43 miles long, and 32 broad; and is fertile in corn and fruit. It also produces great quantities of alum. Viterbo is the capital: the other chief cities are Boscena, Castellana, Civita Vecchia, and Monte Fiascone. This territory is now (1811) subject to France, by a decree of Bonaparte.

(1.) * **PATRIMONY.** *n. f.* [*patrimonium*, Lat. *patrimony*, Fr.] An estate possessed by inheritance.—Inclosures they would not forbid, for that had been to forbid the improvement of the *patrimony* of the kingdom. *Bacon*.—

So might the heir, whose father hath, in play,
Wasted a thousand pounds of ancient rent,

By painful earning of one groat a-day,
Hope to restore the *patrimony* spent. *Davies*.

Posterity stands curs'd; fair *patrimony*
That I must leave ye, sons. *Milton*.

For this redemption, all my *patrimony*
I am ready to forego and quit. *Milton*.

Their ships like wasted *patrimonies* flew. *Dryden*.

The shepherd last appears,

And with him all his *patrimony* bears. *Dryden*.

(2.) **PATRIMONY** has been also applied to church estates or revenues; in which sense authors say, the *patrimony* of the church of Rimini, Milan, &c. The church of Rome had *patrimonies* in France, Africa, Sicily, and many other countries. To create the greater respect to the estates belonging to the church, it was usual to give their *patrimonies* the names of the saints they held in the highest

highest veneration; thus the estate of the church of Ravenna was called the *patrimony of St Apollinarius*; that of Milan, the *patrimony of St Ambrose*; and the estates of the Roman church were called the *patrimony of St Peter in Abruzzo*, the *patrimony of St Peter in Sicily*, and the like.

(3.) **PATRIMONY OF ST PETER.** See **PATRIMONIO**.

PATRINGTON, a town of Yorkshire, near the mouth of the Humber, anciently called **PÆTORIUM**. It is seated at the place where the Roman road from the Picts wall ended. It has a market on Saturday; and lies 18 miles ESE. of Hull, 50 SE. of York, and 192 N. of London. Lon. 0. 8. E. Lat. 53. 49. N.

(1.) * **PATRIOT.** *n. f.* 1. One whose ruling passion is the love of his country.—

Patriots who for sacred freedom stood. Tickell.

The firm patriot there,

Who made the welfare of mankind his care,

Shall know be conquer'd. *Addison.*

Here tears shall flow from a more gen'rous cause,

Such tears as *patriots* shed for dying laws. *Pope.*

2. It is sometimes used for a factious disturber of the government.

(1.) **PATRIOTS, EMINENT.** For instances of eminent ancient patriots, see **ARISTIDES**, **ARISTOMENES**, **BRUTUS**, **CINCINNATUS**, **COBRUS**, **DECIUS MUS**, **EPAMINONDAS**, **FABRICIUS**, **LYCURGUS**, **PELOPIDAS**, **TIMOLEON**, &c For modern examples, see **TELL**, **WALLACE**, and **WASHINGTON**.

PATRIOTIC, *adj.* Actuated by the love of one's country; belonging to a patriot, or patriot-ism.

(1.) * **PATRIOTISM.** *n. f.* [from *patriot*.] Love of one's country; zeal for one's country.

(2.) **PATRIOTISM.** Numberless instances of the most exalted patriotism are recorded in the histories of ancient Greece and Rome. But no event, in ancient or modern history, ever did or can exceed that well authenticated fact that occurred in 1347, at the siege of Calais. See **CALAIS**, N° 1. Nor has our own country been deficient in examples of the most disinterested patriotism. We shall only refer to **WALLACE**.

PATRIPASSIANI, } a sect of Christians, who
PATRIPASSIANS, } appeared about the end of the 4d century, so called from their ascribing passion or suffering to the Father; for they asserted the unity of God in such a manner as to destroy all distinction of persons, and to make the Father and Son precisely the same; in which they were followed by the Sabellians and others. The author of this heresy was **PRAXEAS**, a philosopher of Phrygia. Swedenbourg and his followers seem to hold the same faith.

PATRIX, Peter, a French poet, born at Caen in 1583. Several of his poems are on religious subjects; but one of them, entitled *the Dream*, has been often translated and imitated. He died at Paris in 1673, aged 88.

(1.) **PATRIZI**, Francis, bishop of Gayette, an Italian author of the 15th century. He wrote several works, besides Ten Dialogues in Italian, on the manner of writing and studying history, which are much esteemed. He died in 1494.

(2.) **PATRIZI**, Francis, a learned Italian, born in 1530, at Cherso, in Istria; who taught philosophy at Rome, Ferrara, and Padua, with great reputation. He was an opponent of the Peripatetics. He wrote many works; but his *Paralleli Militari*, or Parallel of the ancient Military Art with the modern, Rome, 1594, fol. is esteemed his most capital piece. He died in 1597, aged 67.

* To **PATROCINATE.** *v. a.* [patrocinor, Lat. patrocinor, old French.] To patronise; to protect; to defend. *Diâ.*

PATROCLES, an ancient author, mentioned by Strabo, who wrote a History of the World.

PATROCLI, an island on the coast of Attica. *Pausan.* iv. C. 5.

PATROCLUS, a Grecian chief at the Trojan war. He was the son of Menæceus king of Opus, by Stenele, Philomela, or Polymela. The killing of Clytonymus, the son of Amphidamas, by accident, in his youth, made him fly from Opus. He went to the court of Peleus king of Phthia; was cordially received, and contracted the most intimate friendship with Achilles, the king's son. When the Greeks went to the Trojan war, Patroclus went with them, at the express desire of his father, and embarked with ten ships from Phthia. He was the constant companion of Achilles; lodged in the same tent; and when he refused to appear in the field of battle, on account of Agamemnon's injustice, Patroclus imitated his example, and his absence was the cause of much loss to the Greeks. At last Nestor prevailed upon him to return to the war, and Achilles permitted him to appear in his armour. The bravery of Patroclus, with the terror which the sight of the arms of Achilles inspired, soon routed the Trojans, and obliged them to fly to the city. He would have broken down the walls; but Apollo opposed him; and Hector, at the instigation of that god, dismounted from his chariot to attack him as he attempted to strip a Trojan whom he had slain. This engagement was obstinate; but Patroclus was at length overpowered by Hector, with the aid of Apollo. His body was at last recovered, and carried to the Grecian camp, where Achilles received it with the loudest lamentations. His funeral was observed with the greatest solemnity. Achilles sacrificed near the burning pile twelve young Trojans, four of his horses, and two of his dogs; and the whole was concluded by the exhibition of funeral games, in which the conquerors were liberally rewarded by Achilles. Achilles, laying aside his resentment against Agamemnon, entered the field to avenge the fall of his friend; and his anger was gratified only by the slaughter of Hector, who had kindled his wrath by appearing at the head of the Trojan armies in the armour taken from Patroclus. The patronymic of *Atorides* is applied to Patroclus, because Actor was father to Menæceus.

(1.) * **PATROL.** *n. f.* [patrouille, *patouille*, old French.] 1. The act of going the rounds in a garri-son, to observe that orders are kept. 2. Those that go the rounds.—

Send forth the saving virtues round the land.
In bright patrol. *Tbonson.*

(2.) The **PATROL**, in war (§ 1. *def.* 2.), generally consists of 3 or 6 men, detached from a body

on guard, and commanded by a serjeant. They go every hour of the night, from the beating of the tattoo until the reveille: they walk in the streets in garrisons, all over the camp in the field, to prevent disorders, or any number of people from assembling together; they are to see the lights in the soldiers' barracks put out, and to take up all the soldiers they find out of their quarters. Sometimes patrols consist of an officer and 30 or 40 men, as well infantry as cavalry; but then the enemy is generally near at hand, and consequently the danger greater.

* To PATROL. *v. n.* [*patrouiller*, Fr.] To go the rounds in a camp or garrison.—

These outguards of the mind are sent abroad, And still patrolling beat the neighbouring road.

Blackmore.

(1.) * PATRON. *n. f.* [*patron*, Fr. *patronus*, Latin.] 1. One who countenances, supports or protects. Commonly a wretch who supports with infolence, and is paid with flattery.

I'll plead for you, as for my patron. *Shak.*

Ne'er let me pass in silence Dorset's name;

Ne'er cease to mention the continu'd debt,

Which the great patron only would forget.

Prior.

2. A guardian saint.—

Thou amongst those saints, whom thou do'st see,

Shalt be a saint, and thine own nation's friend

And patron. *Spenser.*

—St Michael is mentioned as the patron of the Jews, and is now taken by the Christians. *Dryd.*

3. Advocate; defender; vindicator.—We are no patrons of those things. *Hobbes.*—Whether the

minds of men have naturally imprinted on them the ideas of extension and number, I leave to those who are the patrons of innate principles. *Locke.*

4. One who has donation of ecclesiastical preferment.—

Far more the patrons than the clerks inflame:

Patrons of sense afraid, but not of vice. *Wesley.*

(1.) PATRON, among the ancient Romans, was an appellation given to a master who had freed his slave. As soon as the relation of master expired, that of patron began: for the Romans, in giving their slaves their freedom, did not despoil themselves of all rights and privileges in them; the law still subjected them to considerable services and duties towards their patrons, the neglect of which was very severely punished.

(3.) PATRON was also a name, which the ancient Romans gave to some great man, under whose protection they usually put themselves; paying him all kinds of honour and respect, and denominating themselves his CLIENTS; while the patron, on his side, granted them his credit and protection. They were therefore mutually attached and mutually obliged to each other; and thus, in consequence of reciproca ties, all those seditions, jealousies, and animosities, which are sometimes the effect of a difference of rank, were prudently avoided: for it was the duty of the patron to advise his clients in points of law, to manage their suits, to take care of them as of his own children, and secure their peace and happiness. The clients were to assist their patrons with money on several occasions; to ransom them or their

children when taken in war; to contribute to the portions of their daughters; and to defray, in part, the charges of their public employments. They were never to accuse each other, or take contrary sides; and if either of them was convicted of having violated this law, the crime was equal to that of treason, and any one was allowed to kill the offender with impunity. This patronage was a tie as effectual as any consanguinity or alliance, and had a wonderful effect towards maintaining union and concord among the people for the space of 600 years; during which time we find no dissensions nor jealousies between the patrons and their clients, even in the times of the republic, when the populace frequently mutinied against those who were most powerful in the city.

(4.) PATRON, in the church of Rome, (§ 1, *def.* 2.) a saint whose name a person bears, or under whose protection he is put, and whom he takes particular care to invoke; or a saint in whose name a church or order is founded.

(5.) PATRON, in the canon or common law, (§ 1, *def.* 4.) is a person who, having the advowson of a parsonage, vicarage, or the like spiritual promotion, belonging to his manor, bath on that account the gift and disposition of the benefice, and may present to it whenever it becomes vacant. The patron's right of disposing of a benefice originally arises either from the patron or his ancestors, &c. being the founders or builders of the church; from their having given lands for the maintenance thereof; or from the church's being built on their ground; and frequently from all three together. See PATRONAGE, § 2.

(6.) PATRON, in geography, or *Padron*, a town of Syria, on the sea coast, 20 miles SW. of Tripoli. It is said to have been founded by K. Hoba-lus, the ally of Ahab, K. of Israel; and was anciently called *Botrys* or *Botryum*. See BOTRYS.

(1.) * PATRONAGE. *n. f.* [*from patron*.] 1. Support; protection.—Lady, how falls it out, that you, in whom all virtue shines, will take the patronage of fortune, the only rebellious handmaid against virtue's Sidney.—

Here's patronage, and here our heart desires
What breaks its bonds. *Greec.*

2. Guardianship of saints.—Among the Roman Catholics every vessel is recommended to the patronage of some particular saint. *Addison.* 3. Donation of a benefice; right of conferring a benefice.

(2.) PATRONAGE, [*Lat. patronatus*] or ADVOWSON, (§ 1, *def.* 3.) is a sort of incorporeal hereditament, consisting in the right of PRESENTATION to a church or ecclesiastical benefice. Advowson, *advocation*, signifies the taking into protection; and therefore is synonymous with patronage, and he who has the right of advowson is called the PATRON of the church. For when lords of manors first built churches on their own demesnes, and appointed the tithes of those manors to be paid to the officiating ministers, which before were given to the clergy in common, the lord who thus built a church, and endowed it with a glebe or land, had, of common right, a power annexed of nominating such minister as he pleased (provided he were canonically qualified) to officiate in that church of which he was the founder, endower,

maintainer, and patron. Adowfons are either adowfons *appendant*, or adowfons *in grofs*. They are alfo either *prefentative*, *collative*, or *donative*. See ADOWFON. As the law now ftands, if the true patron once waives his privilege of donation, and prefents to the bifhop, and his clerk is admitted and inftituted, the adowfon becomes for ever prefentative, and fhall never become donative any more. For thefe exceptions to general rules and common right are ever looked upon by the law in an unfavourable view, and conftrued as ftictly as poffible. If therefore the patron, in whom fuch peculiar right refides, does once give up that right, the law, which loves uniformity, will interpret it to be done with an intention of giving it up for ever; and will therefore reduce it to the ftandard of other ecclefiaftical livings. See LAW, Part III. Chap. I. Sect. iv. § 5—10.

(V.) PATRONAGE, ARMS OF, in heraldry, are thofe on the top of which are fome marks of fubjection and dependence; thus the city of Paris lately bore the fleur-de-lis in chief to fhew her fubjection to the king; and the cardinals, on the top of their arms, bear thofe of the pope, who gave them the hat, to fhew that they are his creatures.

To PATRONAGE, v. a. [from the noun.] To patronife; to protect. A bad word.—

Dar'ft thou maintain the former words thou fpak'ft?—

Yes, fir, as well as you dare patronage
The envious barking of your faucy tongue.

An out-law in a caſtle keeps,
And uſes it to patronage his thefts.

* PATRONAL, adj. [from *patronus*, Lat.] Protecting; fupporting; guarding; defending; doing the office of a patron.—The name of the city being difcovered unto their enemies; their penates and patronal gods might be called forth by charms. *Brown's Vulg. Err.*

* PATRONESS, n. f. [feminine of *patron*; *patrona*, Lat.] 1. A female that defends, countenancees, or fupports.—

Of cloſe eſcapes the aged patronefs,
Blacker than erft, her fable mantle ſpread!

When with two truſty maids in great diftreſs,
Both from mine uncle and my realm I fled.

—All things ſhould be guided by her direction,
As the ſovereign patronefs and protectreſs of the enterprife. *Bacon*.—

Befriend me, night, beſt patronefs of grief.

—He petition'd his patronefs, who gave him for anſwer, that providence had affigned every bird its proportion. *L'Eſtrange*.—It was taken into the protection of my patronefs at court. *Swift*. 2. A female guardian ſaint.

To PATRONISE, v. a. [from *patron*.] To protect; to fupport; to defend; to countenance.—If a clergyman be looſe and ſcandalous, he muſt not be patroniſed nor winked at. *Bacon*.—All tendernels of conſcience againſt good laws, is hypocrify, and patroniſed by none but men of deſign. *South*.—I have been eſteemed and patroniſed by the grandfather, the father, and the ſon. *Dryden*.

(1.) * PATRONYMICK, n. f. [*patronymique*, *patronymique*, Fr.] Name expreſſing the name of the

father or anceſtor: as *Tydidēs*, the ſon of Tydeus.—It ought to be rendered the ſon, Teſſionides, being a *patronymick*. *Broome*.

(2.) PATRONYMICS, among grammarians, are derived, 1. From the name of the father; as *Pelides*, i. e. Achilles the ſon of Peleus. 2. From the mother; as *Philryides*, i. e. Chiron the ſon of Philryra. 3. From the grandfather on the father's ſide; as *Eacides*, i. e. Achilles the grandſon of Eacus. 4. From the grandfather by the mother's ſide; as *Atlantiades*, i. e. Mercury the grandſon of Atlas. And, 5. From the kings and founders of nations; as *Romulide*, i. e. the Romans, from their founder king Romulus. The terminations of Greek and Latin patronymics are chiefly four, viz. *-ides*, of which we have examples above; as, as *Thaumantias*, i. e. Isis, the daughter of Thaumias; *-is*, as *Atlantias*, i. e. Eleſtra the daughter of Atlas; and *-ne*, as *Nerine* the daughter of Nereus. Of theſe terminations, *-des* is maſculine; and *-is*, and *-ne*, feminine: *-des* and *-ne* are of the firſt declenſion, *-is* and *-is* of the third. The Ruſſians, in their uſual mode of addreſs, never prefix any title or appellation of reſpect to their names; but perſons of all ranks, even thoſe of the firſt diſtinction, call each other by their Chriſtian names, to which they add a patronymic. Theſe patronymics are formed in ſome caſes, by adding *Vitch* (the ſame as our Fitz, as Fitzherbert, or the ſon of Herbert) to the Chriſtian name, of the father; ſ in others by *Of* or *Eſ*; the former is applied only to perſons of condition, the latter to thoſe of inferior rank. Thus, *Ivan Ivanovitch*, *Ivan Ivanof*, is Ivan the ſon of Ivan; or John the ſon of John; *Peter Alexi-vitch*, *Peter Alexiof*, Peter the ſon of Alexis. The female patronymic is *Eſna*, *Oſna*, or *Oſna*, as *Sophia Alexiſna* or *Alexioſna*, Sophia the daughter of Alexis; *Maria Ivanofna* or *Ivanovna*, Mary the daughter of John.

PATROS, a country mentioned by Jeremiaſh and Ezekiel, appears from the context to mean a part of Egypt. Bochart thinks it denotes the Higher Egypt: the Septuagint tranſlate it the country of *Pathure*; Pliny mentions *Nomos Pathurites* in the Thebais; and Ptolemy, *Pathyris*, probably the metropolis. From the Hebrew appellation *Patros*, comes the gentilitious name PATRUSIM. *Mofes*.

PATROUS, [*patroſus*] a ſurname of Jupiter. PATRU, Oliver, a counſellor in parliament, and dean of the French Academy, born at Paris in 1604. He had an excellent faculty both of ſpeaking and writing. Upon his admiſſion into the French academy in 1640, he made an oration of thanks, which gave riſe to the cuſtom of admiſſory ſpeeches. He died very poor, on the 16th Jan. 1681. The prodigious exactneſs with which he finiſhed every thing he wrote, did not permit him to publiſh much. His miſcellaneous works were printed at Paris in 1670, 4to; the 3d edition, in 1714, 4to, was augmented with ſeveral pieces. They conſiſt of Pleadings, Orations, Letters, Lives of ſome of his Friends, Remarks upon the French Language, &c.

PATSCHKAU, a town of Sileſia, in Neiſſe; 9 miles S. of Munſterberg, and 13 W. of Neiſſe.

PATTA, or PATI, an iſland near the coaſt of Africa, about 10 miles in circumference, chiefly inhabited.

inhabited by Arabians, with whom the English, Portuguese, and Indians, trade for ivory and slaves. It lies in the mouth of a river of the same name; in Lon. 41. 30. E. Lat. 1. 50. S.

PATTAN, *Lalit*, a city of India, in Nepal. See **NEPAL**.

PATTANS, **PATANS**, or **AFGHANS**, a very warlike race of men, who had been subjects of the vast empire of **Bochara**. They revolted under their governor **Abtagi**, in the 10th century, and laid the foundation of the empire of **Ghizni** or **Gazna**. (See **GAZNA**.) In the Dissertation prefixed to vol. III. of Dow's History, we have this account of the Pattans. "They are divided into distinct communities, each of which is governed by a prince, who is considered by his subjects as the chief of their blood, as well as their sovereign. They obey him without reluctance, as they derive credit to their family by his greatness. They attend him in all his wars with the attachment which children have to a parent; and his government, though severe, partakes more of the rigid discipline of a general than the caprice of a despot. Rude, like the face of their country, and fierce and wild as the storms which cover their mountains, they are addicted to incursions and depredations, and delight in battle and plunder. United firmly to their friends in war, to their enemies faithless and cruel; they place justice in force, and conceal treachery under the name of address." The empire which took its rise from the revolt of the Pattans, under a succession of warlike princes rose to a surprising magnitude. In the beginning of the 11th century, it extended from **Isfahan** to **Bengal**, and from the mouths of the **Indus** to the banks of the **Jaxartes**, which comprehends at least half of the continent of **Asia**. In the beginning of the 18th century, they had spread themselves over the adjoining province of **Kandahar**; and such was the imbecility of the **Persian** empire at that time, that many other provinces and tributary states were also induced to revolt. When the king or shah of that time, whose name was *Huffin*, opposed the growing power of this warlike people, he was totally defeated, and **Isfahan** was besieged and obliged to surrender, after having suffered dreadful calamities, to an army consisting of only 30,000 men. In consequence of this, they brought about a revolution in **Persia**, and subjected it to themselves. This sovereignty, however, they only held for 7 years and 21 days, having fallen a sacrifice to the enterprising spirit of **Kouli Khan**, or **Nadir Shah**. See **PERSIA**.

PATTAPOOW-WINEPPE, a lake of North America. Lon. 96. 0. W. Lat. 54. 50. N.

(1.) * **PATTEN**. *n. f.* [*patin*, Fr.] A shoe of wood with an iron ring, worn under the common shoe by women, to keep them from the dirt.—Their shoes and pattens are snouted and piked more than a finger long. *Camden*.

Good housewives

Safe through the wet on clinking pattens tread.

Gay.

(2.) * **PATTEN OF A PILLAR**. *n. f.* Its base. *Ainsworth*.

* **PATTENMAKER**. *n. f.* [*patten* and *maker*.] He that makes pattens.

PATTENSEN, a town of Lower Saxony, in Calenberg, 6 miles S. of Hanover.

* **To PATTEN**. *v. n.* [from *potte*, Fr. the foot.] To make a noise like the quick steps of many feet.—

Pattering hail comes pouring on the main.

Dryden.

The stealing shower is scarce to patten heard.

Thomson.

PATTERAH, a river of Asia, which rises in Thibet; and runs into the **Ganges**, on the borders of **Indostan**.

PATTERDALE, a valley of Westmoreland, near the **Ullies**.

* **PATTERN**. *n. f.* [*patron*, Fr. *patron*, Dutch.]

1. The original proposed to imitation; the archetype; that which is to be copied; an exemplar.

—The churches of old should be patterns for us to follow. *Hooker*—

I will be the pattern of all patience. *Shak.*

A pattern to all princes living with her. *Shak.*
—The example and pattern of the church of Rome. *Clarendon*—

Loft not the honour you have early won,

But stand the blameless pattern of a son. *Dryd.*

—Measure the excellency of a virtuous mind; not as it is the copy, but the pattern of regal power. *Grew*.—Patterns to rule by are to be sought for. *Davenant*.—This pattern should be our guide. *Atterbury*.—Christianity commands us to act after a nobler pattern, than the virtues even of the most perfect men. *Rogers*.—

Take pattern by our sister star,

Delude at once and bless our fight. *Swift*.

2. A specimen; a part shown as a sample of the rest.—A gentleman sends to my shop for a pattern of stuff; if he like it, he compares the pattern with the whole piece, and probably we bargain.

Swift. 3. An instance; an example.—What God did command, touching Canaan, concerneth not us, otherwise than only as a fearful pattern of his just displeasure against sinful nations. *Hooker*. 4. Any thing cut in paper to direct the cutting of cloth.

* **To PATTERN**. *v. a.* [*patronner*, Fr. from the noun.] 1. To make an imitation of something; to copy.—

Ay, such a place there is, where we did hunt, Pattern'd by that the poet here describes. *Shak.*

2. To serve as an example to be followed. Neither sense is now much in use.—

When I that censure him do so offend,

Let mine own judgment pattern out my death, And nothing come in partial. *Shak.*

PATTERSON, a town of New Jersey, in Bergen county, seated near the Great Falls of the **Passaic**, 19 miles N.E. of **Morrisstown**, 10 N. of **Newark**, and 100 N. by E. of **Philadelphia**. Lon. 0. 11. E. of that city. Lat. 40. 12. N.

(1.) **PATTI**, **PATI**, or **PIATTI**, a sea port town and bishop's see of Sicily, in **Demona**, on the N. coast, on the Gulf of **Patti**; built on the ruins of **Tindaro**, by **Earl Roger**, after he had conquered the **Saracens**. It is 32 miles W. of **Messina**, and 40 N. of **Catania**. Lon. 15. 22. E. Lat. 38. 11. N.

(2, 3.) **PATTI**, a river of Sicily, which runs into the sea, and forms the bay or Gulf of **Patti**.

PATTIARY, a town of Indostan, in Oude; 55 miles ENE. of Agra, and 55 NW. of Coopta.

PATTISON, William, an English poet, born at Peasmarsh, in Sussex, in 1706, and educated at Appleby, and Sidney College, Cambridge. He afterwards went to London, where he subsisted by his pen, and was entertained by the celebrated Mr Curl, bookseller, in whose house he died of the small-pox, in 1737. His poems, which have merit, were published in 2 vols. 8vo; 1728.

PATTMES, a town of Bavaria, 8 miles N. of Aicha, and 10 ESE. of Rain.

PATTUN, or **PUTTAN**, a city of Indostan in Guzerat, capital of a circar so named, 48 miles N. of Amedabad, and 132 SW. of Oudipour. Lon. 27. 30. E. Lat. 23. 45. N.

PATU, Claudius Peter, a French dramatist, born at Paris, in 1729. In 1754, he published a comedy, entitled *Adieux du Gout*, which had a great run. He came to England, and translated several English comedies with great taste and accuracy. He went with M. Palissot to Geneva, to see Voltaire, who received him with great kindness. He afterwards went to Naples and Rome, but died of a consumption in 1757, soon after his return to Paris, aged 28.

(1.) **PATUCKET**, a village of Rhode island, 4 miles NE. of Providence. It has several manufactures.

(2.) **PATUCKET**, or **BLACKSTONE**. See **BLACKSTONE**, N^o 2.

PATULCIUS, a surname of Janus, from *Pateo*, to open, because his temple was always open in war.

PATUXEN, or ? a navigable river of Maryland. **PATUXENT**, } land, which rises near the source of the Patapsco; and runs into the W. side of Chesapeake Bay, between Drum and Hog's island, 30 miles S. of Annapolis.

(1.) **PAU**, a town of France, in the dep. of the Lower Pyrenees, ci-devant province of Gascony, and late territory of Bearn, with a castle. It was the birth place of Henry IV. It stands on the brow of a rock which hangs over the Gave. Several of the ancient sovereigns of Navarre resided and died in the castle. Pau is a handsome city, and well built. Its population is estimated at 6000; but the rev. C. Cruttwell makes it 22,000. It is 97 miles S. of Bourdeaux. Lon. 0. 4. W. Lat. 43. 15. N.

(2.) **PAU**, or **PAUW**, Cornelius DE, a late celebrated German author, who wrote *Recherches Philosophiques sur les Americains*; and similar philosophical researches respecting the ancient Egyptians and Greeks. He was maternal uncle to the celebrated Anacharsis Clootz. See **CLOOTZ**. He died in June 1799.

(3.) **PAU**, ST, a town of Spain, in Catalonia, 25 miles NW. of Girona.

(1.) * **PAVAN**. **PAVIN**. n. f. A kind of light tripping dance. *Alsfuxrth*.

(2.) **PAVAN**, or ? a grave dance used among the **PAVANE**, ... } Spaniards, and borrowed from them; wherein the performers made a kind of wheel or tail before each other, like that of *pavo*, a peacock; from whence the name is derived. The pavane was formerly in great repute; and was danced by gentlemen with cap and sword; by those of the long robe in their gowns, by

princes with their mantles, and by the ladies with their gown-tails trailing on the ground. It was called the *grand ball*, from the solemnity with which it was performed. To moderate its gravity, it was usual to introduce several flourishes, palfades, capers, &c. by way of episodes. Its tabature or score is given at large by Thoinot Arbeau in his *Orcheographie*.

PAUCAR-COLLA, a province of Buenos Ayres, abounding with sheep, and silver mines. Puna is the capital.

PAUCAR-TAMBA, a prov. of Peru, E. of Cusco, about 72 miles long, fertile in corn and fruit.

* **PAUCILOQUY**. n. f. [*pauciloquium*, Latin.] Sparring and rare speech. *Diſt*.

* **PAUCITY**. [*paucitas*, from *pauci*, Latin.] 1. Fewness; smallness of number.—The multitude of parasites, and *paucity* of schools. *Hooker*.—In such slender corpuscles as those of colour, may easily be conceived a greater *paucity* of protuberant corpuscles. *Boyle*.—Socrates well understood what he said touching the rarity and *paucity* of friends. *L'Estrange*. 2. Smallness of quantity.—This *paucity* of blood is agreeable to many other animals: as lizards, frogs, and other fishes. *Brown*.

PAUCTION, Alexis John Peter, a learned mathematician, born near Luffan, in 1732. His principal work was his *Metrologie*, first published in 1780, which contains a collection of the measures of all countries. The astronomer Laiende assisted him in the foreign department. This excellent work contains also calculations of the ancient measures, with dissertations on population, agriculture, &c. He also published *A Theory of the Laws of Nature*, in 1781, wherein he attempts to refute the systems of Newton and Nollet. He died in 1799.

* To **PAVE**. v. a. [*pavio*, Lat. *paver*, Fr.] 1. To lay with brick or stone; to floor with stone.—

Should she kneel down,

Her brother's ghost his *paved* bed would break,
And take her hence in horror. *Shak.*

—Let not the court be *paved*. *Bacon*.—

I see a city of more precious mould,
With silver *pav'd* and all divine with gold.

Dryden.

—The streets are *paved* with brick or freestone. *Addison*. 2. To make a passage easy.—It might open and *pave* a prepared way to his own title. *Bacon*.

* **PAVEMENT**. n. f. [*pavimentum*, Latin.] Stones or bricks laid on the ground; stone floor; floor is used of stone, but *pavement* never of wood.—

The marble *pavement* closes, he is enter'd

Into his radiant roof. *Shak. Cymbeline*.

A broad and ample road, whose dult is gold,
And *pavement* stars seen in the galaxy. *Milton*.
The long laborious *pavement* here he treads.

Addison.

—The foundation of Roman ways was made of rough stone joined together with cement; upon this was laid another layer, consisting of small stones and cement, to plane the inequalities of the lower stratum, in which the stones of the upper *pavement* were fixed: for there can be no very durable *pavement*, but a double one. *Arbutnot*.

* **PAVER**.

PAVER; **PAVER**, *n. f.* (from *pave*.) One who lays with stones.

For thee the sturdy *paver* thumps the ground.

Gag.

PAVEREL, a town of Essex. It has a fair on Whit-Tuesday.

PAVESAN, or **PAVIA**, a ci-devant duchy of

PAVESE, *i. Italy*, now included in the department of Olona, of which it forms the sd district. It was bounded on the N. by the Milanese, E. by the Lodofan and Placentin; S. by the Genoeſe territory; and W. by the Lumellin and Tortoneſe.

PAVETTA, in botany, a genus of the monogynia order, belonging to the tetrandria claſs of plants; and in the natural method ranking under the 4th order, *Stellatæ*. The corolla is monopetalous and funnel-shaped above; the ſigma carved; the berry diſpermus.

(1.) **PAVIA**, an ancient and celebrated city of Italy, in the department of Olona, diſtrict of Pavia, ci-devant duchy of Milan, and late capital of the Pavetan. It was anciently called *Ticinum*, from its ſituation on that river, and lies 20 miles S. of Milan. It was formerly the capital of the Lombard kingdom, and is ſtill remarkable for the broadneſs of its ſtreets, the beauty and richneſs of its churches, and for its univerſity, founded by Charlemagne, and for ſeveral other literary inſtitutions. Its biſhop's ſee was once the richeſt in Italy; but the city is gone to decay, its trade being ruined. The church and convent of the Carthuſians are inexpressibly noble, the court of the latter being one of the fineſt in the world, and ſurrounded by a portico ſupported by pillars, a mile in circumference. It is defended by ſtrong walls, large ditches, good ramparts, excellent baſtions, and a bridge over the river Teſſino. In the centre of the town is a ſtrong caſtle, where the duke of Milan was wont to reſide. There are many magnificent caſtles, and ſome colleges. It was taken by the duke of Savoy in 1706; by the French in 1733; by the French and Spaniards in 1745; but retaken by the Auſtrians in 1746. It was taken by the French republicans under Gen. Lannes, in June 1800; with 200 cannon, 8000 muſkets, 2000 barrels of gun-powder and a million of cartridges. It is 17 miles S. of Milan, and 72 W. of Mantua. Lon. 9. 15. E. Lat. 45. 10. N.

(2.) **PAVIA**, a diſtrict of Italy, in the dep. of the Olona, comprehending the ci-devant **PAVESE**. At the general cenſus, taken on the 13th May, 1801, it contained 119,105 citizens. **PAVIA** (N^o 1.) is the capital.

(3.) **PAVIA**, a late duchy of Italy. See **PAVESE**.

PAVIE, a town of France, in the dep. of the Gers; 3 miles S. of Auch.

PAVIER. See **PAVER**.

(1.) * **PAVILION**, *n. f.* (*pavilion*, Fr.) A tent; a temporary or moveable houſe.—Flowers being under the trees, the trees were to them a *pavilion*, and the flowers to the trees a moſaical floor. *Sidney*.

She did lie

In her *pavilion*, cloth of gold, of tiſſue. *Shak.*

He, only he, heav'n's blew *pavilion* ſpreads,
And on the ocean's dancing billows treads.

Sandys.
—It was uſual for the enemy, when there was a

king in the field, to demand in what part of the camp he reſided, that they might avoid firing upon the Royal *pavilion*. *Addiſon*.

The glowing fury ſprings,

Once more invades the guilty dome, and ſhrouds
Its bright *pavilions* in a veil of clouds. *Pope.*

(2.) **PAVILION**, in architecture, ſignifies a kind of turret or building, uſually inſulated, and contained under a ſingle roof; ſometimes ſquare, and ſometimes in form of a dome: thus called from the reſemblance of its roof to a tent. Pavilions are ſometimes alſo projecting pieces, in the front of a building, marking the middle thereof; ſometimes the pavilion flanks a corner, in which caſe it is called an *angular pavilion*. The Louvre is flanked with four pavilions: the pavilions are uſually higher than the reſt of the building. There are pavilions built in gardens, commonly called *ſummer-houſes*, *pleaſure-houſes*, &c. Some caſtles or forts conſiſt only of a ſingle pavilion.

(3.) **PAVILION**, in heraldry, denotes a covering in form of a tent, which inveſts or wraps up the armories of divers kings and ſovereigns, depending only on God and their ſword. The pavilion conſiſts of two parts; the top, which is the chapeau, or coronet; and the curtain, which makes the mantle. None but ſovereign monarchs, according to the old French heralds, may bear the pavilion entire, and in all its parts. Thoſe who are elective, or have any dependence, ſay the heralds, muſt take off the head, and retain nothing but the curtains.

(4.) **PAVILION**, in military affairs, ſignifies a tent raiſed on poſts, to lodge under in the ſummer-time.

(5.) **PAVILION** is alſo ſometimes applied to ſtags, colours, enſigns, ſtandards, banners, &c.

(6.) **PAVILIONS**, among jewellers, the underſides and corners of the brilliants, lying between the girdle and the collet.

* To **PAVILION**, *v. a.* [from the noun.] 1. To furniſh with tents.—

Jacob and Mahanaim ſaw

The field *pavilion'd* with his guardians bright.

Milton.

2. To be ſheltered by a tent.—

With his batt'ning flocks the careful ſwain

Abides *pavilion'd* on the graſſy plain.

PAVILLAC, a town of France, in the dep. of Gironde, 10½ miles SE. of Lefparre, and 24 N. of Bourdeaux.

PAVILLON, Stephen, a French lawyer, born at Paris, in 1652. He was advocate general to the Parliament of Metz, and was admitted a member of the French Academy, and of thoſe of Inſcriptions and Belles Lettres. He had a penſion of 3000 livres from Lewis XIV; and died in 1735, aged 73.

PAVILLY, a town of France, in the dep. of Lower Seine; 9 miles NW. of Rouen, and 9 ENE. of Caudebec.

PAVIN. See **PAVAN**, N^o 1.

PAVING, *n. f.* the conſtruction of ground-floors, ſtreets, or highways, in ſuch a manner that they may be conveniently walked upon. In Britain, the pavement of the grand ſtreets, &c. are uſually of ſtint, or rubble-ſtone; courts, ſtables, kitchens, halls, churches, are paved with tiles, bricks,

bricks, flags, or fire-stone; sometimes with a kind of free-stone and rag-stone. In some streets, *v. g.* of Venice, the pavement is of brick; churches sometimes are paved with marble, and sometimes with mosaic work, as the church of St Mark at Venice. In France, the public roads, streets, courts, &c. are all paved with gres or gritt, a kind of free-stone. In Amsterdam and the chief cities of Holland, they call their brick pavement the *burgber-master's pavement*, to distinguish it from the stone or flint pavement, which usually takes up the middle of the street, and which serves for carriages; the brick which borders it being destined for the passage of people on foot. Pavements of free stone, flint, and flags, in streets, &c. are laid dry, *i. e.* in a bed of sand; those of courts, stables, ground-rooms, &c. are laid in a mortar of lime and sand; or in lime and cement, especially if there be vaults or cellars underneath. Some maisons, after laying a floor dry, especially of brick, spread a thin mortar over it; sweeping it backwards and forwards to fill up the joints. The several kinds of pavement are as various as the materials of which they are composed, and whence they derive the name by which they are distinguished; as;

1. **PAVING, GRANITE.** Granite is a hard material, abounding in Scotland, of a reddish colour, very superior to the blue whynn quarry, and at present much used in London. See **GRANITE**.

2. **PAVING, GUERNSEY,** is the best, and very much in use; it is the same stone with the pebble, (see N° 6.) but broken with iron hammers, and squared to any dimensions required, of a prismoidal figure, set with its smallest base downwards. The whole of the foregoing paving should be bedded and paved in small gravel.

3. **PAVING, KNOB,** is done with large gravel-stones, for porticoes, garden-seats, &c.

4. **PAVING, MARBLE,** is mostly variegated with different marbles, sometimes inlaid in mosaic.

5. **PAVING OF CHURCHES, &c.** is often performed with stones of several colours; chiefly black and white, and of several forms, but chiefly squares and lozenges, artfully disposed. Indeed, there needs no great variety of colours to make a surprising diversity of figures and arrangements. M. Truchet, in the Memoirs of the French Academy, has shown by the rules of combination, that two square stones, divided diagonally into two colours, may be joined together chequerwise 64 different ways: which appears surprising enough; since two letters or figures can only be combined two ways. The reason is, that letters only change their situation with regard to the first and second, the top and bottom remaining the same; but in the arrangement of these stones, each admits of four several situations, in each whereof the other square may be changed 16-times, which gives 64 combinations. (See **CHANGE**, § 2.) Indeed, from a farther examination of these 64 combinations, he found there were only 32 different figures, each figure being repeated twice in the same situation, though in a different combination; so that the two only differed from each other by the transposition of the dark and light parts.

6. **PAVING, PEBBLE,** is done with stones collected from the sea-beach, mostly brought from

the islands of Guernsey and Jersey: they are very durable, indeed the most so of any stone used for this purpose. They are used of various sizes, but those which are from six to nine inches deep are esteemed the most serviceable. When they are about 3 inches deep, they are denominated *bolders* or *bowlers*; these are used for paving court-yards, and other places not accustomed to receive carriages with heavy weights; when laid in geometrical figures, they have a very pleasing appearance.

7. **PAVING, PORTLAND,** is done with stone from the island of Portland; sometimes ornamented with black marble dots.

8. **PAVING, PURBECK,** for footways, is in general got in large surfaces about 4½ inches thick; the blue sort is the hardest and the best of this kind of paving. See N° 13.

9. **PAVING, RAG,** was much used in London, but is very inferior to the pebbles; it being in the vicinity of Maidstone in Kent, from which it has the name of *Kentish rag-stone*; there are squared stones of this material for paving coach-tracts and foot-ways.

10. **PAVING, RYEGATE, OR FIRE-STONE,** is used for hearths, stoves, ovens, and such places as are liable to great heat, which does not affect the stone if kept dry.

11. **PAVING, SQUARED,** for distinction by some called *Scotch paving*, because the first of the kind, paved in the manner that has been and continues to be paved, came from Scotland; the first was a clear close stone, called *blue whynn*, which is now disused, because it has been found inferior to others since introduced. See § 1, 2, 4, 7, 8, 10, 14, 17.

12. **PAVING, SWEDLAND,** is a black slate dug in Leicestershire, and looks well for paving halls, or in party-coloured paving.

13. **PAVING, WITH BRICKS.** 1. *Flat brick paving*, is done with brick laid in sand, mortar, or grout, as when liquid lime is poured into the joints. 2. *Brick-on-edge paving*, done with brick laid edge-wise in the same manner. 3. Bricks are also laid flat or edge-wise in herring-bone. 4. Bricks are also sometimes set endwise in sand, mortar, or grout. 5. Paving is also performed with paving bricks.

14. **PAVING WITH NEWCASTLE FLAGS,** or stones about two feet square, and 1½ or two inches thick; they answer very well for paving out-offices: they are somewhat like the Yorkshire.

15. **PAVING WITH PURBECK PITCHES;** square stones used in footways; they are brought from the island of Purbeck, and also frequently used in court-yards; they are in general from six to ten inches square, and about five inches deep.

16. **PAVING WITH TILES, &c.** 1. With ten inch tiles: 2. With foot tiles: 3. With clinkers for stables and outer offices: 4. With the bones of animals, for gardens, &c.

17. **PAVING, YORKSHIRE.** Yorkshire affords an exceeding good material for foot-ways, and it is got of almost any dimensions, of the same thickness as the Purbeck. This stone will not admit the wet to pass through it, nor is it affected by the frost.

PAUKATUCK, a river of the United States, which forms part of the line of division between Connecticut

Connecticut and Rhode Island, and falls into Stonington harbour.

(1.) PAUL, formerly named SAUL, was of the tribe of Benjamin, a native of Tarsus in Cilicia, a Pharisee by profession, first a persecutor of the church, and afterwards a disciple of Jesus Christ, and apostle of the Gentiles. It is thought he was born about two years before our Saviour, supposing that he lived 68 years, as is mentioned in a homily in the sixth volume of St. Chrysostom's works. He was a Roman citizen, because Augustus had given the freedom of the city to all the freemen of Tarsus, in consideration of their firm adherence to his interests. His parents sent him early to Jerusalem, where he studied the law at the feet of Gamaliel, a famous doctor. He made very great progress in his studies, and his life was always blameless before men; being very zealous for the whole observation of the law of Moses. But his zeal carried him too far; he persecuted the church, and when the protomartyr St. Stephen was stoned, Saul was not only consenting to his death, but he even took care of the clothes of those that stoned him. This happened A. D. 33, a short time after our Saviour's death. After the death of St. Stephen, Saul showed the utmost violence in distressing the Christians; and having got credentials from the high-priest Caiaphas, and the elders of the Jews, to the chief Jews of Damascus, with power to bring to Jerusalem all the Christians he should find there, he went away full of threats, and breathing nothing but blood. But as he was upon the road, and drawing near to Damascus, all on a sudden, about noon, he perceived a great light to come from heaven, which encompassed him and all those that were with him. This splendor threw them on the ground: and Saul heard a voice saying to him, "Saul, Saul, why persecutest thou me?" His answer, with his blindness, his cure, and the other surprising circumstances that followed, and issued in his conversion, are recorded in the 9th chapter of the Acts. But the conversion of such a man, at such a time, and by such means, furnishes one of the most complete proofs that have ever been given of the divine origin of our holy religion. That Saul, from being a zealous persecutor of the disciples of Christ, became all at once a disciple himself, is a fact which cannot be controverted without overturning the credit of all history. He must therefore have been converted in the miraculous manner in which he himself said he was, and of course the Christian religion be a divine revelation, or he must have been either an impostor, an enthusiast, or a dupe to the fraud of others. There is not another alternative possible. If he was an impostor, who declared what he knew to be false, he must have been induced to act that part by some motive: (See MIRACLE.) But the only conceivable motives for religious imposture are, the hopes of advancing one's temporal interest, credit, or power; or the prospect of gratifying some passion or appetite under the authority of the new religion. That none of these could be St. Paul's motive, for professing the faith of Christ crucified, is plain from the state of Judaism and Christianity at the period of his forsaking the former and embracing the latter faith. Those whom he left were the disposers of

wealth, of dignity, of power, in Judea: those to whom he went were indigent men, oppressed, and kept from all means of improving their fortunes. The certain consequence, therefore, of his taking the part of Christianity was the loss not only of all that he possessed, but of all hopes of acquiring more; whereas, by continuing to persecute the Christians, he had hopes, rising almost to a certainty, of making his fortune by the favour of those who were at the head of the Jewish state, to whom nothing could so much recommend him as the zeal which he had shown in that persecution. As to credit or reputation, could the scholar of Gamaliel hope to gain either by becoming a teacher in a college of fishermen? Could he flatter himself, that the doctrines which he taught would, either in or out of Judea, do him honour, when he knew that "they were to the Jews a stumbling block, and to the Greeks foolishness?" Was it then the love of power, that induced him to make this great change? Power! over whom? over a flock of sheep whom he himself had assisted to destroy, and whose very Shepherd had lately been murdered! Perhaps, it was with the view of gratifying some licentious passion, under the authority of the new religion, that he commenced a teacher of that religion! This cannot be alleged; for his writings breathe nothing but the strictest morality, obedience to magistrates, order, and government, with the utmost abhorrence of all licentiousness, idleness, or loose behaviour, under the cloak of religion. We nowhere find in his works, that faints are above moral ordinances; that dominion is founded in grace; that monarchy is despotism which ought to be abolished; that the fortunes of the rich ought to be divided among the poor; that there is no difference in moral actions; that any impulses of the mind are to direct us against the light of our reason and the laws of nature; or any of those wicked tenets by which the peace of society has been often disturbed, and the rules of morality often broken, by men pretending to act under the sanction of divine revelation. He makes no distinctions like the impostor of Arabia in favour of himself; nor does any part of his life, either before or after his conversion to Christianity, bear any mark of a libertine disposition. As among the Jews, so among the Christians, his conversation and manners were blameless.—It has been sometimes objected to the other apostles, by those who were resolved not to credit their testimony, that, having been deeply engaged with Jesus during his life, they were obliged, for the support of their own credit, and from having gone too far to return, to continue the same professions after his death; but this can by no means be said of St. Paul. On the contrary, whatever force there may be in that way of reasoning, it all tends to convince us, that St. Paul must *naturally* have continued a Jew, and an enemy to Christ Jesus. If they were engaged on one side, he was as strongly engaged on the other. If shame withheld them from changing sides, much more ought it to have stopped him; who, from his superior education, must have been vastly more sensible to that kind of shame, than the mean and illiterate fishermen of Galilee. The only other difference was, that they, by quitting their master after his death, might have

have preserved themselves; whereas he, by quitting the Jews, and taking up the cross of Christ, certainly brought on his own destruction. As St Paul was not an impostor, so it is plain he was not an enthusiast. Heat of temper, melancholy, ignorance, and vanity, are the ingredients of which enthusiasm is composed; but from all these, except the first, the apostle appears to have been wholly free. That he had great fervour of zeal, both when a Jew and when a Christian, in maintaining what he thought to be right, cannot be denied; but he was at all times so much master of his temper, as, in matters of indifference, to "become all things to all men," with the most pliant condescension, bending his notions and manners to theirs, as far as his duty to God would permit; a conduct compatible neither with the stiffness of a bigot, nor with the violent impulses of fanatical delusion. That he was not melancholy, is plain from his conduct in embracing every method which prudence could suggest to escape danger and shun persecution, when he could do it without betraying the duty of his office or the honour of his God. A melancholy enthusiast courts persecution; and when he cannot obtain it, afflicts himself with absurd penances; but the holiness of St Paul consisted only in the simplicity of a godly life, and in the unwearied performance of his apostolical duties. That he was ignorant, no man will allege who is not grossly ignorant himself; for he appears to have been master, not only of the Jewish learning, but also of the Greek philosophy, and to have been very conversant even with the Greek poets. That he was not credulous, is plain from his having resisted the evidence of all the miracles performed on earth by Christ, as well as those that were afterwards wrought by the apostles; to the fame of which, as he lived at Jerusalem, he could not possibly have been a stranger. And that he was as free from vanity as any man that ever lived, may be gathered from all that we see in his writings, or know of his life. He represents himself as the least of the apostles, and not meet to be called an apostle. He says that he is the chief of sinners; and he prefers, in the strongest terms, universal benevolence to faith, prophecy, miracles, and all the gifts and graces with which he could be endowed. Is this the language of vanity or enthusiasm? Did ever fanatic prefer virtue to his own religious opinions, to illuminations of the spirit, and even to the merit of martyrdom? Having thus shown that St Paul was neither an impostor nor an enthusiast, it remains only to be inquired, whether he was deceived by the fraud of others: but this inquiry needs not be long, for who was to deceive him? A few illiterate fishermen of Galilee? It was morally impossible for such men to conceive the thought of turning the most enlightened of their opponents, and the cruellest of their persecutors, into an apostle, and to do this by fraud, in the very instant of his greatest fury against them and their Lord. But could they have been so extravagant as to conceive such a thought, it was physically impossible for them to execute it in the manner in which we find his conversion to have been effected. Could they produce a light in the air, which at mid-day was brighter than the sun? Could they make Saul hear words from

out of that light, which were not heard by the rest of the company? Could they make him blind for three days after that vision, and then make scales fall off from his eyes, and restore him to sight by a word? Or could they make him and those who travelled with him believe, that all these things had happened, if they had not happened? Most unquestionably no fraud was equal to all this. Since then St Paul was neither an impostor, nor an enthusiast, nor deceived by the fraud of others, it follows that his conversion was miraculous, and that the Christian religion is a divine revelation. See Lord LYTLETON'S *Observations on the Conversion of St Paul*; a treatise to which it has been truly said, that infidelity has never been able to fabricate a specious answer, and of which this is a very short and imperfect abridgement.—The escape of St Paul from Damascus, where the Jews had influenced the governor to seize him; his meeting at Jerusalem with the disciples, who were still afraid of him; the plot of the Jews to kill him; his journey to Cæsarea, and thence to Tarsus, where he continued from A. D. 37 to 43; his journey thence with Barnabas to Antioch, and from that city to Jerusalem, with supplies to the disciples during the famine, A. D. 44. when he met with the prophets, Simeon, Lucius, and Manaen, and when he is supposed to have had his ineffable vision of heaven, (1 Cor. xii. 2-4.); his journey with Barnabas to Cyprus; the opposition of Barjesus, his blindness; the conversion of Sergius Paulus, A. D. 45; the change of Saul's name into Paul; his journey to Perga, and preaching in the synagogues there, as well as Antioch, Iconium, Lystra, and Derbe; the miracles he wrought and persecutions he suffered at these places; his recovery after being stoned, and supposed dead; the dissension about circumcision at Antioch; his mission with Barnabas to Jerusalem for the opinion of the other apostles on this subject, with their decision; his censure of St Peter for his dissimulation; his separation from Barnabas, and junction with Silas; their journey through Lycania, Phrygia, Galatia, Mysia, Troas, to Macedonia; their imprisonment, &c. at Philippi; the conversion of Lydia and the jailor, and their spirited exhortation with the magistrates; their journey through Amphipolis and Appollonia, to Thessalonica and Berea; the tumults raised by the Jews against them in these cities; Paul's voyage to Athens, A. D. 53; his disputes there with the philosophers; his defence before the Areopagus; the conversion of Dionysius and Damaris; his journey to Corinth, where he continued 8 months; and whence, or from Athens, he wrote his two epistles to the Thessalonians; his accusation before Gallio, and acquittal; his voyage to Ephesus, Cæsarea, and Jerusalem; his journey through Antioch, Galatia, Phrygia, and the higher provinces of Asia; his return to Ephesus, where he continued 3 years, from A. D. 54, to 57; wrote his epistle to the Galatians, and performed many miracles, and where he says, he also fought with *beasts*; but whether he did this literally in the amphitheatre, in consequence of a sentence of the heathen magistrates, or whether the expression is only a metaphorical allusion to the scuffle he had with Demetrius and the silver-smiths, commentators are not

not agreed: His journey after this to Philippi in Macedonia along with Timothy, whence he wrote his two epistles to the Corinthians; thence to Achaia, Corinth, Assos, Mitylene, Miletus, Coos, Rhodes, Patara, Tyre, Ptolemais, and Cæsarea; where he met with Philip the evangelist, and the prophet Agabus, who foretold his future sufferings: His journey thence to Jerusalem, where by the advice of St James, he took the vow of a NAZARITE; the riot raised in the temple against him by the Jews; his rescue from their fury by Lyfias; his unjust treatment by Ananias the high priest; the division between the Pharisees and Sadducees respecting him; the bloody vow of the Jewish assassins to murder him; his transmission to Felix by Lyfias, his accusation by Tertullus, and his animated defence; the injustice of Felix; Paul's spirited oration before Festus and AGRIPPA; its effect upon the latter; Paul's appeal to Cæsar, and consequent voyage from Adramyttium over the seas of Cilicia and Pamphylia, to Myra, and thence to Crete; the storm of 14 days; the shipwreck on the coast of Malta, with all the interesting particulars attending it; the cure of Publius, &c. Paul's re-embarkation and voyage to Syracuse, Rhegium, and Puteoli, with his final arrival at Rome, and reception there by his countrymen, are all fully recorded by St Luke, in the Acts of the Apostles, from chap. ix. to xxviii. Paul dwelt for two whole years at Rome, from A. D. 61. to 63. in a hired lodging; where he received all that came to him, preaching the religion of Jesus Christ, without interruption. His captivity contributed greatly to the advancement of religion: for he converted several persons even of the emperor's court. (Phil. i. 12—18. and iv. 22.) The Christians at Philippi, hearing that St Paul was a prisoner at Rome, sent Epaphroditus to him, with money, to assist him in their name. (Phil. ii. 25.) Epaphroditus fell sick at Rome; and when he went back to Macedonia, the apostle sent by him his Epistle to the Philippians. It is not known by what means St Paul was delivered from his prison, but it is certain that he was set at liberty, after having been two years a prisoner at Rome. He wrote also, during this imprisonment, his Epistles to Philemon and the Colossians. He was still in Rome, or at least in Italy, when he wrote his Epistle to the Hebrews. He travelled over Italy; and, according to some of the fathers, passed into Spain; then into Judea; went to Ephesus, and there left Timothy; (Heb. xiii. 24. and 1 Tim. i. 3.) preached in Crete, and there fixed Titus, to cultivate the church in that place. Probably he might also visit the Philippians; (Phil. i. 23. 26. and ii. 24.) and it is believed, that it was from Macedonia that he wrote the First Epistle to Timothy.—Some time after, he wrote to Titus, whom he had left at Crete; desiring him to come to Nicopolis, whence, probably he sent this letter. The year following, that is A. D. 65, he went into Asia, and came to Troas, (2 Tim. iv. 13.) Thence he went to visit Timothy at Ephesus, and from that to Miletus. (2 Tim. iv. 20.) Lastly, he went to Rome; and St Chrysostom says, that it was reported, that having converted a cup-bearer and a concubine of Nero, this so provoked the Emperor, that he caused St Paul to be apprehended,

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and put in prison. It was in this last place of confinement, that he wrote his 2d Epistle to Timothy, which Chrysostom looks upon as the apostle's last testament. See TIMOTHY and TITUS. This great apostle at last consummated his martyrdom, the 29th of June, A. D. 66, by having his head cut off, at a place called the *Salvian Waters*. He was buried on the way of Ostium, and a magnificent church was built over his tomb, which is still in existence. *Calmet's Dict.* &c.

(2.) PAUL, first bishop of Narbonne, or SERGIUS PAULUS the proconsul, converted and made bishop by St Paul, was descended from one of the best families of Rome. It is said the apostle called himself *Paul* from his name. The Spaniards venerate him as their apostle; and say he died a martyr at Narbonne.

(3.) PAUL I. Pope of Rome, succeeded his brother Stephen II. A. D. 757; governed with great moderation, and died in 767.

(4.) PAUL II. Pope, a noble Venetian, was nephew of Pope Eugene IV. who made him a cardinal in 1440. He was elected Pope in 1464, and died in 1471, aged 54.

(5.) PAUL III. Pope, whose original name was Alexander Farnese, was born in 1467, and elected pope in 1534. He established the inquisition, approved of the Society of the Jesuits, and acted with great violence against Henry VIII. of England. The famous council of Trent was held in his reign. He died in 1549, aged 82.

(6.) PAUL IV. Pope, whose original name was John Peter Caraffa, was born in 1475. He was a learned man, and wrote on the Creed and other subjects; but was very violent against the reformers. He was elected pope in 1555, when he was 80, and died in 1559, aged 84.

(7.) PAUL V. Pope, was born in 1552, at Rome; was first clerk of the chamber, and afterwards nuncio to Clement VIII. in Spain, who made him a cardinal. He was elected pope on the 16th May 1603, after Leo XI. The ancient quarrel between the secular and ecclesiastical jurisdictions, which formerly had occasioned much bloodshed, revived in his reign. The senate of Venice had condemned by two decrees, 1. The new foundations of monasteries made without their concurrence. 2. The alienation of the estates both ecclesiastical and secular. The first decree passed in 1603, and the 2d in 1605. About this time a canon and abbot, accused of rapine and murder, were arrested by order of the senate, and delivered over to the secular court; which gave offence to the court of Rome. Clement VIII. took no notice of the affair; but Paul V. who had managed the Genoese upon a similar occasion, hoped that the Venetians would be equally pliant. But the senate maintained that they held their power to make laws of God only; and therefore refused to revoke their decrees, and deliver up the ecclesiastical prisoners to the nuncio. Paul, provoked at this behaviour, excommunicated the doge and senate; and threatened to put the whole state under an interdict, if satisfaction was not given him within 24 hours. The senate protested against this menace, and forbade the publication of it in their dominions. A number of pamphlets were published on both sides. The Capuchins, Theatines, and

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Jesuits,

Jesuits, were the only religious orders who observed the interdict. The senate shipped them all off for Rome, and banished the Jesuits for ever. Meantime Paul was preparing to make the refractory republic submit to his tyranny by force of arms. He levied troops against the Venetians; but he soon found his design balked, as the cause of the Venetians appeared to be the common cause of all princes. He had recourse, therefore, to Henry IV. to settle the differences; who soon brought about a reconciliation. His ambassadors at Rome and Venice began the negotiation, and Card. de Joyeuse finished it in 1607. Paul was strongly solicited to make the *immaculate conception of the holy virgin* an article of faith, but he only prohibited the contrary doctrine to be publicly taught. He afterwards embellished Rome, and collected the works of the most eminent painters and engravers. Rome is indebted to him for its most beautiful fountains, especially that where the water spouts out from an antique vase taken from the hot baths of Vespasian, and the *aqua Paola*, an ancient work of Augustus, restored by Paul V. He brought water into it by an aqueduct 35 miles long. He completed the frontispiece of St Peter, and the magnificent palace of Mount Cavallo. He also restored and repaired several ancient monuments. His pontificate was honoured with several illustrious embassies. The kings of Japan, Congo, and other Indian princes, sent ambassadors to him. He sent missionaries, and founded bishoprics in these countries. He showed the same attention to the Maronites and other eastern Christians. He also sent legates to different orthodox princes. He died 28th Jan. 1621, aged 69; after having confirmed the French Oratory, the Ursulines, the Order of Charity, and some other institutions. He enjoined all the religious in the prosecution of their studies to have regular professors for Latin, Greek, Hebrew, and Arabic.

(8.) PAUL, Father, whose name, before he entered into the monastic life was *Peter Sarpi*, was born at Vienna, Aug. 14, 1552. His father was a merchant, who died leaving his family unprovided for, but his uncommon abilities under the tuition of a maternal uncle rendered him master of languages and science at a very early age. At 14 he took the habit of the order of the Servites, and at 23 was made a priest. After passing successively through the dignities of his order, he was chosen provincial for Venice at 26 years of age; and discharged this post with such honour, that in 1579 he was appointed, with two others, to draw up new regulations and statutes. This he executed with great success; and when his office of provincial was expired, he retired to the study of experimental philosophy and anatomy, in which he is said to have made some useful discoveries. In the dispute between the pope and the senate of Venice (see PAUL V.), his controversial writings irritated the papal court so highly, that they hired assassins to murder him, but he escaped with severe wounds. This, and other attempts upon his life, obliged him to confine himself to his convent, where he engaged in writing the *History of the Council of Trent*, on which, and other works of less consequence, he spent the remaining part of his life. He died on Saturday the 14th Jan. 1623. He

was buried with great pomp at the public charge, and a magnificent monument was erected to his memory.

(9.) PAUL, Mark. See PAULO.

(10.) PAUL of Samosata. See PAULUS, N° 4.

(11.) PAUL, late emperor of Russia, the son of the unfortunate Peter III. by Catherine II. was born Oct. 1, 1754; and married Oct. 10, 1773, to Wilhelmina, daughter of Lewis, landgrave of Hesse-Darmstadt, who died in childhood April 30th 1776, without leaving issue. He next married, Oct. 7, 1776, Sophia Augusta Dorothea, daughter of Pr. Charles of Wirtemberg, by whom he had Alexander, the present emperor, Constantine, Alexandra, Helen, and Anne. He took an active part in the late war; but was murdered on the 23d March, 1801. See RUSSIA.

(12.) PAUL, in sea language, is a short bar of wood or iron, fixed close to the capstern or windlass of a ship, to prevent those engines from rolling back or giving way, when they are employed to heave in the cable, or otherwise charged with any great effort.

(13.) PAUL, in geography, a town of Yorkshire, seated on the Humber, S. of Heaton.

(14.) PAUL, St, a province of S. America, in Brazil, which is a kind of independent republic; originally colonized, in 1570, by a set of banditti of several nations, who were transported from Portugal; and the country being surrounded by thick forests and inaccessible mountains, they soon threw off all dependence on the mother country. However they now pay a small tribute of gold to Portugal. The climate is excellent.

(15.) PAUL, St, the capital of the above republic, was built in 1570; and lies 12 miles from the coast, and 210 W. of Janeiro. Lon. 45. 52. W. Lat. 23. 25. S.

(16.) PAUL, St, a town in the isle of Bourbon.

(17.) PAUL, St, an island in the Indian Ocean. Lon. 61. 2. E. Lat. 37. 51. S.

(18.) PAUL, St, an island in the Gulf of St Lawrence; 9 miles NE. of Cape Breton.

(19.) PAUL, St, a town of Malta; 6 miles NW. of Malta.

(20.) PAUL, St, CAVE, or GROTT O F, a place in the island of Malta, where St Paul and his company took shelter from the rains, when the viper fastened on his arm. Upon this spot there is a church built by the famed Alof de Vignacourt, grand-master of the order, in 1606, a very handsome small structure.

(21—25.) PAUL, St, is also the name of 5 towns in the over-grown, and now *imperial* French republic; viz. 1. in the dep. of Mont Blanc, late Savoy, and ci-devant duchy of Chablais, on the lake of Geneva, 10 miles E. of Tonan; 2. in that of the Gard, 10 miles NE. of Uzès; 3. in that of the Straits of Calais, and late prov. of Artois, 16 miles from Arras; Lon. 2. 30. E. Lat. 50. 24. N. 4. in that of Tarn, 9 miles NW. of Caune; 5. in that of Upper Vienne; 6 miles S. of St Leonard, and 9 SE. of Limoges. It also makes part of the name of other 6 French towns: viz.

(26.) PAUL, St, DE FENOUILLEDES, in the dep. of the Eastern Pyrenees, according to Cruttwell, but Brookes places it in that of Gard, and late

late prov. of Languedoc, on the Egli, among the mountains; 30 miles N. of Montpellier. Lon. 3. 58. E. Lat. 44. 7. N.

(17.) PAUL, ST, DE TORROT, in the dep. of the Arriège; $4\frac{1}{2}$ miles NNE. of Tarascon, and 12 SSW. of Mirepoix.

(18.) PAUL, ST, EN JOREST, in the department of Rhone and Loire, 18 miles SSW. of Lyons.

(19.) PAUL, ST, LES ROMANS, in the department of Drome, and district of Romans; $4\frac{1}{2}$ miles NE. of Romans.

(20.) PAUL, ST, LES VENCES, in the dep. of the Var, and ci-devant prov. of Provence; 7 miles W. of Nice, 9 ENE. of Grasse, and 430 SE. of Paris. Lon. 7. 13. E. Lat. 43. 42. N.

(21.) PAUL, ST, TROIS CHATEAUX, in the dep. of Drome, and late prov. of Dauphiny; 12 miles S. of Montelimart, and $13\frac{1}{2}$ N. of Orange.

(1.) PAULA, a learned Roman lady, who flourished in the 4th century. She was descended from the Scipios and the Gracchi, and added to the brightest qualities of the mind the virtues of Christianity. She was well versed in the Hebrew Scriptures, and was the intimate friend of St Jerome. She died A. D. 407.

(2.) PAULA, in geography, a town of Italy, in the dep. of the Crostolo, and ci-devant duchy of Reggio.

(3.) PAULA, a town of Naples, in Calabria Citra, near the coast; 12 miles NW. of Cosenza. Lon. 16. 9. E. Lat. 39. 24. N.

(4.) PAULA, ST, an island of Russia, in the Frozen Ocean. Lon. 121. 0. E. Ferro. Lat. 76. 54. N.

PAVLA, a fort of Russia, in Caucasus.

PAULAR, a town of Spain, in Old Castile; 11 miles ESE. of Segovia.

PAULEYS, a town of S. Carolina, 8 miles S. of Kingston.

PAULHAC, a town of France, in the dep. of the Cantal; 10 miles W. of St Flour.

PAULHAN, a town of France, in the dep. of Hérault; 9 miles N. of Pezenas.

PAULHIAC, a town of France, in the dep. of Lot and Garonne; 6 miles SSE. of Villereal.

PAULI, Simon, physician to Frederick III. king of Denmark. He published *Flora Danica*; and a treatise on the use and abuse of tobacco and tea. He died in 1682, aged 77.

PAULIAGUET, a town of France, in the dep. of Upper Loire; $7\frac{1}{2}$ miles SE. of Moulins, and 18 NW. of Puy.

PAULIANISTÆ, a sect of heretics, so called PAULIANISTS, from their founder, PAULUS SAMOSATENUS, a native of Samosata, elected patriarch of Antioch in 262. His doctrine amounted to this: that the Son and the Holy Ghost exist in God in the same manner as reason and activity do in man; that Christ was born a mere man; but that the reason or wisdom of the Father descended into him, and by him wrought miracles upon earth, and instructed the nations; and, finally, that, on account of this union of the Divine Word with the man Jesus, Christ might, though improperly, be called God. He did not baptize in the name of the Father and the Son, &c.; for which reason the council of Nice ordered those baptized by him to be re-baptized. Being condemned by Dionysius Alexandrinus in

a council, he abjured his errors, to avoid deposition; but soon after resumed them, and was deposed by another council in 269.—He may be considered as the father of the modern Socinians; and his errors are severely condemned by the council of Nice, whose creed differs a little from that now used, under the same name, in the church of England.

PAULICIANS, a branch of the ancient Manichees, so called from their founder, one PAULUS, an Armenian, in the 7th century; who, with his brother John, both of Samosata, formed this sect: though others are of opinion that they were thus called from another PAULUS, an Armenian by birth, who lived in the reign of Justinian II. In the 7th century, a zealot called Constantine revived this drooping sect, which was ready to expire under the severity of the imperial edicts. The Paulicians, however, by their numbers, and the countenance of the emperor Nicephorus, became formidable to all the East. But the cruel rage of persecution, which had for some years been suspended, broke forth with redoubled violence in the reigns of Michael Curopalates and Leo the Armenian, who inflicted capital punishment on such of the Paulicians as refused to return into the bosom of the church. Under the empress Theodora, tutress of the emperor Michael, in 845, several of them were put to death, and more retired among the Saracens; but they were neither all exterminated nor banished. Upon this they entered into a league with the Saracens; and choosing for their chief an officer of the greatest resolution and valour, whose name was *Carbeas*, they declared against the Greeks a war, which was carried on for 50 years with the greatest vehemence and fury. During these commotions, some Paulicians, towards the conclusion of this century, spread abroad their doctrines among the Bulgarians: many of them, either from zeal, or to avoid persecution, retired, about the close of the 11th century, from Bulgaria and Thrace, and formed settlements in other countries. Their first migration was into Italy; whence they sent colonies into most of the other provinces of Europe, and formed gradually a considerable number of religious assemblies, who adhered to their doctrine, and who were afterwards persecuted with the utmost vehemence by the Roman pontiffs. In Italy they were called *Patarini*, from *Patavia*, in Milan, where they held their assemblies; and *Gathari* or *Gazari*, from *Gazaria*, or the Lesser Tartary. In France they were called *Albigenses*, though their faith differed widely from that of the Albigenses whom Protestant writers generally vindicate. (See ALBIGENSES.) The first religious assembly the Paulicians formed in Europe, was at Orleans, in 1077, in the reign of Robert, when many of them were burnt alive. The ancient Paulicians, according to Photius, expressed the utmost abhorrence of Manes and his doctrine. The Greek writers comprise their errors under the six following particulars. 1. They denied that this inferior and visible world is the production of the Supreme Being; and they distinguish the Creator of the world and of human bodies from the most high God who dwells in the heavens; and hence some think that they

were a branch of the Gnostics rather than of the Manichæans. 2. They refused to worship the Virgin Mary. 3. They refused to celebrate the institution of the Lord's supper. 4. They refused to follow the practice of the Greeks, who paid to the pretended wood of the cross a sort of religious homage. 5. They rejected the books of the Old Testament; and looked upon the writers of that sacred history as inspired by the Creator of this world, and not by the supreme God. 6. They excluded presbyters and elders from all part in the administration of the church.

PAULIEN, St., a town of France, in the dep. of Upper Loire; 6 miles NNW. of Puy, and 21 SE. of Brioude.

PAULIN, a town of France, in the dep. of the Tarn; 12 miles E. of Alby.

(1.) PAULINA, a Roman lady, wife of Saturninus, governor of Syria, in the reign of the emperor Tiberius. Her conjugal peace was disturbed, and violence was offered to her virtue, by a young man named Mundus, who fell in love with her, and had caused her to come to the temple of Isis by means of the priests of that goddess, who declared that Anubis wished to communicate to her something of moment. Saturninus complained to the emperor of the violence which had been offered to his wife; and the temple of Isis was overturned, and Mundus banished, &c.

(2.) PAULINA, wife of the philosopher SENECA. She attempted to kill herself when Nero had ordered her husband to die. The emperor, however, prevented her; and she lived some few years after, in the greatest melancholy.

PAULINGSTOWN, a township of New York, in Dutchess county, on the W. bank of the Connecticut. In 1790, it contained 4288 citizens, and 44 slaves; and in 1796 it had 560 qualified electors.

PAULINIA, in botany, a genus of the trigynia order, belonging to the octandria class of plants; and in the natural method ranking under the 23d order, *Trihilata*. Its characters are these: the flower has a permanent empalement, composed of 4 small oval leaves; it has 4 oblong oval petals, twice the size of the empalement, and 8 short lamina with a turbinate germen, having 3 short slender styles, crowned by spreading stigmas; the germen turns to a large three-cornered capsule with 3 cells, each containing one almost oval seed. Linnaeus reckons 7, and Miller 9 species, natives of the West Indies.

PAULIN'S KILL, a river of New Jersey, which is navigable for small vessels 15 miles to Sussex county.

(1.) PAULINUS, bishop of Nola, was born at Bonnaux, about A. D. 353. He was consul of Rome, and married Thersia, who converted him to Christianity. He was made bishop of Nola, where he continued till it was taken and sacked by the Goths, in 410. He wrote *Letters* and *Poems* with elegance, and died in 431.

(2.) PAULINUS, an English bishop, who flourished in the early part of the 7th century. He was the apostle of Yorkshire, and the first archbishop of York, about A. D. 626. He built a church at Almonbury, and dedicated it to St Al-

ban, where he converted the Brigantes. Camden mentions a cross at Dewborough, which had been erected to him, with this inscription, *Paulinus hic predicavit et celebravit*. York was so small about this time, that there was not so much as a small church in it, in which K. Edwin could be baptized. Constantius made it a bishopric. Pope Honorius made it a metropolitan see. Paulinus baptized in the river Swale, in one day, 10,000 men, besides women and children, on the first conversion of the Saxons to Christianity; besides many at Halystone. At Wallstone, in Northumberland, he baptized Segbert, king of the East Saxons. Bede says, "Paulinus coming with the king and queen to the royal manor called *Ad-Gebrin* (now YEVEKIN), staid there 36 days with them, employed in the duties of catechizing, instructing, and baptizing the people in the neighbouring river Glen." He adds, that "he preached the word in the province of Lindisfi, and converted the governor of the city of Lindocollina, whose name was Blecca, with all his family." In this city he built a stone church of exquisite workmanship, whose roof being ruined, only the walls are now standing." He also founded a collegiate church of priors near Southwell, in Nottinghamshire, dedicated to the Virgin Mary, when he baptized the Countess of the Trent.

PAULINZELLE, a town of Upper Saxony, in Schwartzburg; 8 miles W. of Rudolstadt, and 20 N. of Coburg.

PAULMIER, James, DE GRENTSMENIL, an eminent French author, born in Augé, in 1387. He went early into the army, but quitted it for literature, settled at Caen, and was the first promoter of its academy. He published various learned works; particularly *Observationes in optimos Auctores Græcos*; Lug. Bat. 4to, 1668. He died at Caen in 1690, aged 83.

PAULMIY, a town of France, in the department of Indre and Loire; 12 miles SW. of Loches.

PAULO, Mark, a celebrated traveller, was son of Nicholas Paulo, a Venetian, who went with his brother Matthew, about 1255, to Constantinople, in the reign of Baldwin II. In the course of their mercantile travels, having been favourably received at the court of Kublai, grand khan of the Tartars, they returned thither with two missionaries from Rome, and young Mark. This young man, having learned the different dialects of Tartary, was employed in embassies which gave him the opportunity of travelling Tartary, China, and other eastern countries. At length, after a residence of 17 years at the court of the grand khan, the three Venetians returned to their own country, in 1295, with immense fortunes. A short time after his return, Mark serving his country at sea against the Genoese, his galley, in a great naval engagement, was sunk, and himself taken prisoner, and carried into Genoa. He remained there many years in confinement; and composed the history of his own and his father's voyages, under this title, *Delle maraviglie del mondo da lui vedute*, &c.; printed first at Venice, in 8vo, 1496. In the writings of Mark Paulo, there are some things true, and others highly incredible.

PAULOGRAĐ,

PAULOGRADE, a town of Russia, in Ekaterinofsk; 32 miles E. of Ekaterinofsk. Lon. 53. 40. E. Ferro. Lat. 47. 10. N.

PAULO POST-FUTURUM, a tense in the Greek verbs, used to express a period *a little after the future*. There is nothing analogous to this in the Latin or any other language.

PAULOV, a town of Russia, 26 miles S. of Naiva.

PAULOVA, a town of Russia, in Irkutsk.

PAULOVSK, a town of Russia, in Voronez, on the Don; 68 miles SE. of Voronez. Lon. 58. 0. E. Ferro. Lat. 50. 10. N.

PAULOVSKAYA, a town of Russia, in Ekaterinofsk, on the Dnieper; 32 miles E. of Ekaterinofsk.

PAUL'S BAY, ST. a bay on the W. coast of Newfoundland; 10 miles N. of Bonne Bay.

PAULSBURGH, a township of New Hampshire, in Grafton county, near the head waters of the Ammonoosuck.

PAUL'S ISLANDS, ST. an island in the Strait between Newfoundland and Cape Breton; 15 miles NE. of North Cape. Lon. 60. 2. W. Lat. 47. 30. N.

PAUL'S POINT, a cape on the E. coast of Barbadoes; half a mile S. of Cuckold's Point.

(1.) **PAUL'S ST.** a township and parish of S. Carolina in Charlestown district; containing only 276 citizens, and 3157 slaves, in 1795.

(2.) **PAUL'S ST.** the most southerly of the Pearl Islands, in the Gulf of Panama.

(1.) **PAULUS**, the founder of the **PAULICIANS**. See that article.

(2.) **PAULUS, ÆMILIUS**. See **ÆMILIUS PAULUS**.

(3.) **PAULUS HOOK**, a fortified post of New Jersey, on North River, where it is 2000 yards broad, opposite New York, where the Americans were defeated in 1779 by the British. See **AMERICA**—§ 31.

(4.) **PAULUS SAMOSATENUS**, the founder of the sect of **PAULIANISTS**. (See that article.) Zenobia, Q. of Palmyra, had a great esteem for him, on account of his eloquence; and he is said to have new-modelled Christianity, and framed his heresy, chiefly with a view to make a convert of her; but she stuck to her prejudices in favour of Judaism.

(5.) **PAULUS, SERGIUS**. See **PAUL**, N° 2.

* **PAUNCH**. *n. f.* [*panse*, French; *pança*, Spanish: *pantex*, Latin.] The belly; the region of the guts.—Demades, the orator, was talkative, and would eat hard; Antipater would say of him, that he was like a sacrifice, that nothing was left of it but the tongue and the *paunch*. Bacon.—

Pleading Matho born abroad for air,
With his fat *paunch* fills his new-fashion'd chair.

Dryden.

* To **PAUNCH**. *v. a.* [from the noun]. To pierce or rip the belly; to exenterate; to take out the paunch; to eviscerate.—

Batter his skull, or *paunch* him with a stake.

Shak.

Chiron attack'd Talthybius with such might,
One pass had *paunch'd* the huge hydropick knight.

Garth.

PAUNGARTENBERG, a town of Germany, in Austria; 6 miles SW. of Grein.

(1.) **PAVO**, in astronomy, the *Peacock*, a constellation in the southern hemisphere, unknown to the ancients, and not visible in our latitude. It consists of 14 stars, of which the names and situations are as follows:

Stars.	Longi- tude.	Latitude South.	Magnitude.
	0 0 0	0 0 0	0 0 0
The eye of the peacock	0 0 0	3 36 11	18 2
In the breast	24 41	51 46 56	21 3
In the right wing	18 41	38 45 52	34 3
In the middle	3 42	28 44 29	8 3
In the root of the tail, first	3 53	24 44 6	13 5
second	2 42	11 41 37	9 5
third	3 55	22 29 3	23 4
fourth	5 11	3 37 10	46 6
fifth	0 49	34 38 34	14 5
sixth	1 19	39 17 38	3 36 4
seventh	27 22	53 40 9	28 5
last	24 7	44 41 28	2 4
In the right foot	1 22	11 48 6	3 4
In the left foot	9 43	7 50 49	7 4

See **ASTRONOMY**, § 549.

(II.) **PAVO**, in ichthyology. See **PEACOCK FISH**.

(III.) **PAVO**, in ornithology; a genus belonging to the order of gallinæ. The head is covered with feathers which bend backwards; the feathers of the tail are very long, and beautifully variegated with eyes of different colours. Latham enumerates 8 species:

1. **PAVO ALBUS**, the *white peacock*, is, as its name imports, entirely white, not excepting even the eyes of the train, which it is nevertheless easy to trace out. This variety is, in Latham's opinion, more common in England than elsewhere. He met with two instances of the females of this species having the external marks of the plumage of the male.

2. **PAVO BICALCARATUS** is larger than the common pheasant. The bill is black, but from the nostrils to the tip of the upper mandible red. The irides are yellow. The feathers on the crown of the head are sufficiently long to form a crest, of a brown dull colour. The space between the bill and eyes is naked, with a few scattered hairs: the sides of the head are white; the neck is bright brown, striated across with dusky brown: the upper parts of the back, scapulars, and wing coverts, are dull brown, dotted with paler brown and yellowish; besides which, each feather is marked near the end with a roundish large spot of a gilded purple colour, changing into blue and green in different lights; the lower part of the back and rump are dotted with white; all the under parts are brown, striated transversely with black: the quills are dusky; the secondaries are marked with the same spot as the rest of the wing: the upper tail coverts are longer than the tail, and each marked at the end with a spot like the wing

wing feathers, each of which is surrounded, first with a circle of black, and ultimately with an orange one: the legs and claws are brown, and on the back part of each leg are two spurs, one above the other. The female is a third smaller than the male. The head, neck, and under parts are brown; the head smooth: the upper parts are also brown, and the feathers marked with a dull blue spot, surrounded with dirty orange: the feathers which cover the tail are similar; but marked at the end with an obscure dull oval spot of blue: the legs have no spurs. This species is of Chinese origin, and some of them have been brought from China to England alive, and have been for some time in the possession of Dr James Monro. The male is now in the Leverian Museum, in the finest preservation. Sonnerat observes, that the bird from whence his description was taken had two spurs on one leg, and three on the other. This must surely be a *lusus nature*; especially as he says, it is the same as that in *Edw. pl. 67*.

3. *PAVO CRISTATUS*, the common peacock of English authors, has a compressed crest and solitary spurs.—It is about the size of a turkey; the length from the top of the bill to the end of the tail being 3 feet 8 inches. The bill is nearly two inches long, and is of a brown colour. The irides are yellow. On the crown there is a sort of crest, composed of 24 feathers, which are not webbed, except at the ends, which are gilded green. The shafts are of a whitish colour; and the head, neck, and breast, are of a green gold colour. Over the eye there is a streak of white, and beneath there is the same. The back and rump are of a green gold colour, glossed over with copper: the feathers are distinct, and lie over each other like shells. Above the tail, springs an inimitable set of long beautiful feathers, adorned with a variegated eye at the end of each; these reach considerably beyond the tail; and the longest of them in many birds are four feet and a half long. This beautiful train, or tail as it is improperly called, may be expanded quite to a perpendicular upwards at the will of the bird. The true tail is hid beneath this group of feathers, and consists of 18 grey brown feathers, one foot and a half long, marked on the sides with rufous grey: the scapulars and lesser wing coverts are reddish cream-colour, variegated with black: the middle coverts deep blue, glossed with green gold: the greatest and bastard wing rufous: the quills are also rufous; some of them variegated with rufous, blackish, and green: the belly and vent are greenish black: the thighs yellowish: the legs stout; those of the male furnished with a strong spur three quarters of an inch in length; the colour of them grey brown. The female is rather less than the male. The train is very short, being much shorter than the train, and scarcely longer than its coverts; neither are the feathers furnished with eyes. The crest on the head is similar to that on the head of the male: the sides of the head have a greater portion of white: the throat and neck are green: the rest of the body and wings are cinereous brown: the breast is fringed with white: the bill is the same: the irides are lead-coloured: the legs are as in the male; but the spur is generally want-

ing, though in some birds a rudiment of one is seen. In some male birds, all the wing coverts and scapulars are of a fine deep blue green, very glossy; but the outer edge of the wing and quills are of the common colour. These birds, now so common in Europe, are of eastern origin. They are found wild in the islands of Ceylon and Java in the East Indies; and at St Helena, Barbuda, and other West India islands. They are not natural to China; but they are found in many places of Asia and Africa. They are, however, nowhere so large or so fine as in India, in the neighbourhood of the Ganges, whence they have spread into all parts, increasing in a wild state in the warmer climes; but requiring care in the colder regions. In ours, this species does not come to its full plumage till the 3d year. The female lays 5 or 6 greyish white eggs; in hot climates 20, the size of those of a turkey. These, if let alone, the lays in some secret place, at a distance from the usual resort, to prevent their being broken by the male, which he is apt to do if he find them. The time of sitting is from 27 to 30 days. The young may be fed with curd, chopped leeks, barley-meal, &c. moistened; and are fond of grasshoppers, and some other insects. In 5 or 6 months they will feed as the old ones, on wheat and barley, with what else they can pick up in the circuit of their confinement. They seem to prefer the most elevated places to roost on during night; such as high trees, tops of houses, and the like. Their cry is loud and inharmonious; a perfect contrast to their external beauty. They are caught in India, by carrying lights to the trees where they roost, and having painted representations of the bird presented to them at the same time; when they put out the neck to look at the figure, the sportsman slips a noose over the head, and secures his game. In most ages they have been esteemed a salutary food. Hortensius gave the example at Rome, where it was carried to the highest luxury, and sold dear: and a young peacock is thought a dainty even in the present times. The life of these birds is reckoned by some at about 25 years; by others 100. So beautiful a species of birds as the peacock, could not long remain unknown: so early as the days of Solomon, we find, among the articles imported in his Tarshish navies, apes and peacocks. Ælian relates, that they were brought into Greece from some barbarous country; and that they were held in such high esteem, that a male and female were valued at Athens at 1000 drachmæ, or 32l. 5s. 10d. At Samos they were preferred about the temple of Juno, being sacred to that goddess; and Gellius, in his *Noctes Atticæ*, c. 16. commends the excellency of the Samian peacocks. When Alexander was in India, he found vast numbers of wild ones on the banks of the Hyarotis; and was so struck with their beauty, as to appoint a severe punishment on any person that killed them. Peacocks crests, in ancient times, were among the ornaments of the kings of England. Ernald de Aclent was fined to king John in 140 paltries, with sack-buts, lorains, gilt spurs, and peacocks crests, such as would be for his credit. See *Plate CCLXX*.

4. *PAVO MUTICUS*, is about the size of the crested peacock; but the bill is larger and ash-coloured:

coloured: the irides are yellow, and round the eyes is red; on the top of the head is an upright crest 4 inches long, and shaped somewhat like an ear of corn. The colour is green mixed with blue. The top of the neck and head are greenish, marked with spots of blue, which have a streak of white down the middle of each: the back is greenish blue; the breast is blue and green gold mixed; the belly, sides, and thighs are ash-colour, marked with black spots, streaked with white on the belly; the wing coverts and secondaries are not unlike the back: the greater quills are green, transversely barred with black lines, but growing yellowish towards the ends, where they are black: the upper tail coverts are fewer than those of the common peacock, but much longer than the tail; they are chestnut brown, with white shafts, and have at the end of each a large spot gilded in the middle, then blue, and surrounded with green: the legs are ash-coloured, and not furnished with spurs, or they have been overlooked by those who have seen them. The female is smaller than the male; and has the belly quite black, and the upper tail coverts much shorter: the tail is green, edged with blue, and white shafts. It inhabits Japan, and is only known to Europe by a painting sent by the emperor of Japan to the Pope.

5. **PAVO TIBETANUS**, is about the size of a pintado, being about two feet and nearly two inches long. The bill is above an inch and a half long, and cinereous: the irides are yellow: the head, neck, and under parts, are ash-coloured, marked with blackish lines: the wing covert, back, and rump, are grey, with small white dots; besides which, on the wing covert and back, are large round spots of a fine blue, changing in different lights to violet and green gold: the quills and upper tail coverts are also grey, marked with blackish lines; the quills have two round blue spots on each, like those of the coverts; on the outer webs, and on each tail feather, there are four of the same, two on each side the web; the middle coverts are the longest, the others shortened by degrees: the legs are grey, furnished with two spurs behind, like the species N° 1.: the claws are blackish. This species inhabits the kingdom of Thibet. The Chinese give it the name of *Chin-tchien-Khi*.

6. **PAVO VARIATUS**, the *variegated peacock*, is a mixed breed between the common and white peacock; and of course varies very considerably in colour.

PAVOASAN, or) a town of Africa, in the
PAVOASSAN,) island of St Thomas, be-
longing to Portugal, the residence of the gover-
nor and the bishop; with a fort and a good har-
bour. It lies under the equator. Lon. 8. 30. W.

PAVONA, a town of Italy, in the department of Mella, district of Brescia, and late province of Bresciano.

PAVOR, **METUS**, or **TIMOR**, **FEAR**, a Roman deity, whose worship was introduced by Tullus Hostilius, who, in a panic, vowed a shrine to him, and one to **PALLOR**, *Paleness*; and therefore they are found on the coins of that family. The Ephori of Sparta erected a temple to Fear, near their tribunal, to strike an awe into those who approached it. Fear was likewise worshipped at Corinth. The poets did not forget this imaginary

deity. Virgil places him in the entrance of hell, in company with diseases, old age, &c. *Æn.* vi. 273. Ovid places him in the retinue of Tisiphone, one of the furies, *Met.* iv. 485.

* **PAUPER**. *n. f.* [Latin.] A poor person; one who receives alms.

PAURÆDASTYLÆ, in the old mineralogy, a genus of perfect crystals with double pyramids, and no intermediate column, composed of 12 planes, or two hexangular pyramids, joined base to base.

PAUSA, a town of Upper Saxony, in Vogtland; 13 miles NNW. of Plauen, and 72 WSW. of Dresden.

PAUSANIA, in Grecian antiquity, a festival in which were solemn games, wherein nobody contended but free-born Spartans; in honour of Pausanias the Spartan general. See **PAUSANIAS**, N° 1.

(1.) **PAUSANIAS**, a Spartan king and general, who signalised himself at the battle of Platæa against the Persians. The Greeks, sensible of his services, rewarded his merit with a tenth of the spoils taken from the Persians. He was afterwards appointed to command the Spartan armies, and he extended his conquests in Asia; but the haughtiness of his behaviour created him many enemies; and the Athenians soon obtained a superiority in the affairs of Greece.—Pausanias, dissatisfied with his countrymen, offered to betray Greece to the Persians if he received in marriage, as the reward of his perfidy, the daughter of their king. His intrigues were discovered by a young man who was intrusted with his letters to Persia, and who refused to go, on recollecting that such as had been employed in that office before had never returned. The letters were given to the Ephori of Sparta, and the perfidy of Pausanias was thus discovered. He fled for safety to a temple of Minerva; and as the sanctity of the place screened him from the violence of his pursuers, the sacred building was surrounded with heaps of stones, the first of which was carried there by the indignant mother of the unhappy man. He was starved to death in the temple, and died about A. A. C. 474. There was a festival instituted to his honour, and an oration spoken in his praise, in which his actions were celebrated, particularly the battle of Platæa, and the death of Mardonius. See **PAUSANIA**.

(2.) **PAUSANIAS**, a learned Greek historian and orator, in the 1d century, under Antoninus the philosopher. He was the disciple of Herodes Atticus; he lived for a long time in Greece; and afterwards went to Rome, where he died at a great age. He wrote an excellent description of Greece, in ten books; in which we find, not only the situation of places, but the antiquities of Greece, and every thing most curious and worthy of knowledge. Abbe Gedin has given a French translation of it, in 2 vols. 4to.

(3.) **PAUSANIAS**, the murderer of Philip II. of Macedon. See **MACEDON**, § 9.

(1.) * **PAUSE**. *n. f.* [*pause*, Fr. *pausa*, Latin; *παυση*.] 1. A stop; a place or time of intermission.—Neither could we ever come to any *pause*, whereon to rest our assurance this way. *Hooker*.

This gentleman

Steps in to Cassio, and intreats his *pause*. *Shak.*
Some *pause* and respite only I require. *Denb.*

—The

—The punishment must always be rigorously exacted, and the blows by *pauses* laid on till they reach the mind. *Locke*.—

Whilst those exalted to primeval light,
Only perceive some little *pause* of joys. *Prior*.

What *pause* from woe, what hopes of comfort bring

The names of wife or great? *Prior*.

—Our discourse is not kept up in conversation, but falls into more *pauses* and intervals than in our neighbouring countries. *Spektor*. 2. Suspense; doubt.—

I stand in *pause* where I shall first begin. *Shak*.
3. Break; paragraph; apparent separation of the parts of a discourse.—He writes with warmth, which usually neglects method, and those partitions and *pauses* which men educated in the schools observe. *Locke*. 4. Place of suspending the voice marked in writing thus —. 5. A stop or intermission in music.

(1.) A *PAUSE* is a cessation in speaking, singing, playing, or the like. One use of pointing in grammar, is to make proper *pauses*. There is a *pause* in the middle of each verse; in an hemistich, called a *rest* or *repose*. See *POETRY*, and *READING*.

* *TO PAUSE*, *v. n.* 1. To wait; to stop; not to proceed; to forbear for a time, used both of speech and action.—

Tarry; *pause* a day or two. *Shak*.

While I *pause*, serve in your harmony. *Shak*.

Pausing a while, thus to herself she mus'd.

Milton.

Here th' archangel *paus'd*,

Between a world destroy'd and world restor'd.

Milton.

2. To deliberate.—

Other offenders we will *pause* upon. *Shak*.
—Solyman *pausing* a little upon the matter, suffered himself to be intreated. *Knolles*. 3. To be intermitted.—

The pealing organ, and the *pausing* choir,
And the last words, that dust to dust convey'd!

Tickel.

* *PAUSER*, *n. f.* [from *pause*.] He who *pauses*; he who deliberates.—

The expedition of my violent love

Outruns the *pauser*, reason. *Macbeth*.

PAUSIAS, a famous ancient painter, the inventor of ENCAUSTIC PAINTING, was a native of Sicily. He was a disciple of Pamphilus, and flourished about A. A. C. 352. He drew a beautiful picture of his mistress Glycere, for which Lucullus gave two talents. The Sicyonians being obliged to sell his pictures to clear an enormous debt, they were all purchased by M. Scaraus, the Roman.

PAUSILIPPO, a celebrated mountain of Naples, 5 miles from Puzzoli, famous for its grotto, or rather its subterraneous passage through it, near a mile long, about 20 feet broad, and from 30 to 40 in height. The gentry generally drive through it with torches; but the country people find their way with little difficulty, by the light which enters at each end; and by two holes pierced through the mountain from the top, near the middle of the passage. On this mountain is the tomb of

Virgil, overgrown with ivy, and overshadowed by an ancient laurel tree.

PAUSILYPUS, the ancient name of *PAUSILIPPO*.

PAUTUCKEE. See *BLACKSTONE*, N° 2.

PAUTZKE, a town of W. Prussia, in Pomerania; 25 miles NW. of Dantzick. It was taken by the Danes, in 1464, after a long siege; by the Swedes in 1626; and by the Poles, in 1627. Lon. 18. 41. E. Lat. 45. 44. N.

PAUXIS, a fort of Brazil, in Para, on the N. bank of the Amazon. Lon. 40. 56. W. Lat. 1. 30. S.

PAUZANNE, Sr., a town of France, in the dep. of Lower Loire; 12 miles SW. of Nantes.

PAUZEN, a town of Bohemia, in Bolelaw; 10 miles E. of Jung Bunzel.

PAUZK. See *PAUTZKE*.

* *PAW*, *n. f.* [*pausen*, Welsh.] 1. The foot of beast of prey.—

One chose his ground,

Whence rushing he might surest seize them both,

Grip'd in each *paw*. *Milton's Par. Lost*.

—The bear goes backward into his den that the hunter rather mistakes than finds the way of his *paw* *Holyday*.—The bee and serpent know their flings, and the bear the use of his *paus*. *More against Atheism*.—If lions had been brought up to painting, where you have one lion under the feet of a man, you should have had twenty men under the *paw* of a lion. *L'Estrange*.

Both their *paus* are fasten'd on the prey.

Dryden.

2. Hand. In contempt.—

Be civil to the wretch imploring,

And lay your *paus* upon him without roaring.

Dryden.

(1.) * *TO PAW*, *v. n.* [from the noun.] To draw the fore foot along the ground.—

The fiery courser,

Pricks up his ears, and trembling with delight
Shifts place, and *paus*, and hopes the promis'd fight.

Dryden.

Th' impatient courser pants in every vein,

And *pausing*, seems to beat the distant plain.

Pope.

—Once, a fiery horse, *pausing* with his hoof, struck a hole in my handkerchief. *Swift*.

(2.) * *TO PAW*, *v. a.* 1. To strike with a drawn stroke of the fore foot.—

His hot courser *paus'd* th' Hungarian plain.

Tickel.

2. To handle roughly. 3. To fawn; to flatter. *Ainsworth*.

(3.) *TO PAW*, *v. a.* in the manege. A horse is said to paw the ground, when, his leg being either tired or painful, he does not rest it upon the ground, and fears to hurt himself as he walks.

* *PAWED*, *adj.* [from *paw*.] 1. Having paws.

2. Broad footed.

PAWING, a town of East Friesland, near the Ems; 3 miles S. of Emden.

PAWLET, a township of Vermont, in Rutland county, containing 1458 citizens, in 1797.

(1.) * *PAWN*, *n. f.* [*pand*, Dutch; *pan*, French.]

1.

1. Something given to pledge as a security for money borrowed, or promise made.—

Her oath for love, her honour's *pawn*. *Shak.*
—As for mortgaging and pawning, men will not take *pawns* without use; or they will look for the forfeiture. *Bacon.*—His very word will countervail the bond or *pawn* of another. *Howel.*—Here's the very heart, and soul, and life-blood of Gomez; *pawns* in abundance, till the next bribe helps their husbands to redeem them. *Dryden.* 2. The state of being pledged.—

Sweet wife, my honour is at *pawn*. *Shak.*
Redeem from broking *pawn* the blemish'd crown. *Shak.*

3. A common man at chess.—

Here I a *pawn* admire,
That still advancing higher,
At top of all became
Another thing and name. *Cowley.*

(2.) *PAWN* is derived a *pugno*, quia res que *pignori* dantur, *pugno* vel manu traduntur. The party that pawns goods hath a general property in them; they cannot be forfeited by the party that hath them in pawn for any offence of his, nor be taken in execution for his debt; neither may they otherwise be put in execution till the debt for which they are pawned is satisfied. If the pawn is laid up, and the *PAWNEE* robbed, he is not answerable; though if the *paawnee* use the thing, as a jewel, watch, &c. that will not be the worse for wearing, which he may do, it is at his peril; and if he is robbed, he is answerable to the owner, as the using occasioned the loss, &c. If the pawn is of such a nature that the keeping is a charge to the *paawnee*, as a cow or a horse, &c. he may milk the one, and ride the other, and this shall go in recompence for his keeping. Things which will grow the worse by using, as apparel, &c. he may not use.

* To *PAWN*. *v. a.* [from the noun.] To pledge; to give in pledge. It is now seldom used but of pledges given for money.—

I hold it cowardice
To rest mistrustful, where a noble heart
Hath *pawn'd* an open hand in sign of love. *Shak.*

—Let's lead him on with a fine baited delay, 'till he hath *pawn'd* his horses. *Shak. Merry Wives.*—I dare *pawn* down my life for him, that he hath writ this to feel my affection to your honour. *Shak.*

Will you thus break your faith?—

I *pawn'd* you none. *Shak.*

I'll *pawn* the little blood which I have left,

To save the innocent. *Shak.*

'Tis dear remembrance of that fatal glance,

For which he lately *pawn'd* his heart. *Waller.*

She who before had mortgag'd her estate,

And *pawn'd* the last remaining piece of plate. *Dryden.*

—One part of the nation is *pawned* to the other. *Swift.*

* *PAWNBROKER*. *n. f.* [*pawn* and *broker*.] One who lends money upon pledge.—Those money-lenders seem to have been little better than our *pawnbrokers*. *Arbutnot.*

PAWNEE. *n. f.* One who lends on pawns.

PAWTEWATAMIES, a nation of N. American Indians, who reside in the North-Western
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Territory, on the banks of the river St Joseph. They have 200 warriors. They ceded to the United States a tract of 6 miles square.

PAX, the goddess of *PEACE*, among the ancients. The Athenians erected a statue of her, representing her as holding *Plutus*, the god of wealth, in her lap. They also first erected in altar to her, after Cimon's victory over the Persians; (*Plus*.) or after that of Timotheus over the Spartans. (*Nepos*.) The Romans represented her with an olive branch in the one hand, and the horn of plenty in the other. See *PEACE*, § 5.

PAXARO, } or *PAXARO NIGRO*, an island,
PAXAROS, } or cluster of islands, near the coast of California, in the N. Pacific Ocean. Lon. 120. 41. W. Lat. 29. 30. to 30. 18. S.

PAXIMADES, an island near the S. coast of Candia. Lon. 41. 29. E. Ferro. Lat. 34. 54. N. (1.) *PAXTON*, a village of Scotland, in Berwickshire, on the Tweed, in Hutton parish; containing 271 inhabitants in 1791.

(2.) *PAXTON*, a township of Massachusetts, in Worcester county; 8 miles W. of Worcester, and 59 SW. of Boston. It had 558 citizens in 1795.

(3.) *PAXTON, LOWER*, } two townships of Penn-
(4.) *PAXTON, UPPER*, } sylvania, in Dauphin County.

PAXU, an island in the Mediterranean, 12 miles in circumference, with a good harbour; yet uninhabited on account of the pirates. It is 8 miles SE. of Corfu. Lon. 38. 7. E. Ferro. Lat. 39. 21. N.

* *PAY*. *n. f.* [from the verb.] Wages; hire; money given in return for service.—

Come on, brave soldiers, doubt not of the day;

And, that once gotten, doubt not of large *pay*. *Shak.*

—There is neither *pay* nor plunder to be got. *L'Estrange.*—Money, instead of coming over for the *pay* of the army, has been transmitted thither for the *pay* of those forces called from thence. *Temple.*

Here only merit constant *pay* receives. *Pope.*

* To *PAY*. *v. a.* [*paier*, Fr. *apagar*, Spanish; *pacare*, Lat.] 1. To discharge a debt. It is applied to debts of duty, as well as debts of commerce.—

You have done enough, and have perform'd
A faint-like sorrow; and indeed *paid* down

More penitence, than done trespass. *Shak.*

Your son has *paid* a soldier's debt. *Shak.*

—She does what she will, say what she will, take all, *pay* all. *Shak.*

The king and prince

Then *paid* their offerings. *Dryden.*

—An hundred talents of silver did the children of Ammon *pay*. 2 *Chron.* xxvii. 5.—This day have I *paid* my vows. *Proverbs*, vii. 14. 2. It is opposed to borrow.—The wicked borroweth, and *payeth* not again. *Psalms*. 3. To dismiss one to whom any thing is due with his money: as, he had *paid* his labourers. 4. To atone; to make amends by suffering: with *for* before the cause of payment.—

If this prove true, they'll *pay for't*. *Shak.*

Bold Prometheus, whose untam'd desire

Q Rival'd

Rivall'd the fun with his own heav'nly fire,
Now doom'd the Scythian culture's endless
prcy,

Severely *pays* for animating clay. *Roscommon*.
—Men of parts, who were to act according to
the result of their debates, and often *pay* for their
mistakes with their heads, found those scholastic
forms of little use to discover truth. *Locke*. 5. To
beat.—I follow'd me close, and, with a thought,
seven of the eleven I paid. *Shak*.—

Forty things more, my friends, which you
know true,

For which, or *pay* me quickly, or I'll *pay* you.

Ben. Jonson.

6. To reward; to recompense.—

She I love, or laughs at all my pain,

Or knows her worth too well, and *pays* me
with disdain. *Dryden*.

7. To give the equivalent for any thing bought.
—Riches are got by consuming less of foreign
commodities, than what by commodities or la-
bour is paid for. *Locke*.—It is very possible for a
man that lives by cheating, to be very punctual
in *paying* for what he buys. *Law*.

* **PAYABLE**. *adj.* [*payable*, Fr. from *pay*.] 1.
Due; to be paid.—The marriage-money the
princes brought was *payable* ten days after the
solemnization. *Bacon*.—The farmer rates or com-
pounds the sums of money *payable* to her majesty,
for the alienation of lands, made without or by
licence. *Bacon*. 2. Such as there is power to pay.
—Thanks are a tribute *payable* by the poorest.
South.

* **PAYDAY**. *n. f.* [*pay* and *day*.] Day on which
debts are to be discharged, or wages paid.—La-
bourers pay away all their wages, and live upon
trust till next *payday*. *Locke*.

PAYENGAUT, or **COIMBETTORE**, a district
of Indostan, in Mysore, on the Malabar coast.
See **COIMBETTORE**, N° 1, and **MYSOORE**, N° 1.
and 2.

* **PAYER**. *n. f.* [*payeur*, Fr. from *pay*.] One
that pays.

PAYERNE, a town of Switzerland, in Berne;
22 miles SW. of Berne.

PAYJAN, a town of Peru, in Truxillo.

(1.) **PAYMAGO**, a fortress of Portugal, in Es-
tremadura, on the sea coast 4½ miles SSE. of Pe-
niche.

(2.) **PAYMAGO**, a town of Spain, in Seville, on
the frontiers of Portugal, 35 miles N. of Aya-
monte.

* **PAYMASTER**. *n. f.* [*pay* and *master*.] One
who is to pay; one from whom wages or reward
is received.—Howsoever they may bear fail for a
time, yet are they so sure *paymasters* in the end,
that few have held out their lives safely. *Hay-
ward*.—If we desire that God should approve us,
it is a sign we do his work, and expect him our
paymaster. *Taylor*.

* **PAYMENT**. *n. f.* [from *pay*.] 1. The act
of paying.—No man envieth the *payment* of a
debt. *Bacon*. 2. The thing given in discharge of
debt or promise.—

Thy husband

Craves no other tribute at thy hands

But love, fair looks, and true obedience;

Too little *payment* for so great a debt. *Shak*.

3. A reward.—

Give her an hundred marks.

—An hundred marks! by this light I'll ha'
more.

An ordinary groom is for such *payment*. *Shak*.
—He that would understand the falsehood and
deceit of sin thoroughly, must compare its pro-
mises and its *payments* together.—4. Chastisement;
sound beating. *Ainsworth*.

(1.) **PAYNE**, Nevil, an English dramatic writer,
who flourished under Charles II. He pub-
lished 3 plays, viz. 1. The Fatal Jealousy; a tra-
gedy; 4to, 1673. 2. The Morning Ramble, or,
the Town Humours; a comedy; 4to, 1673. 3.
The siege of Constantinople; a tragedy, 4to,
1675.

(2.) **PAYNE**, Roger, a late eminent English book-
binder, the first of his profession, who introduced
a style of binding that united elegance with dura-
bility. The ornaments used by him were appro-
priated to the subject. His master-piece was an
Æschylus, the decorations of which were superb
beyond description. The binding of this work
cost Earl Spencer fifteen guineas. He died in 1797.
Watkins.

PAYO, Sr., a town of Portugal, in Tras los
Montes, 18 miles W. of Miranda de Duero.

PAYRABA, a town of Brazil, in the Northern
division.

(1.) **PAYS**, Renatus Le, a French poet, born at
Nantz, in 1636. He was comptroller-general of
imports, in Provence. He published a miscellany,
in prose and verse, entitled, *Amities, Amours, et
Amourettes*.

(2.) **PAYS**, or **PAIS**. See **PAIS**.

* **To PAYSE**. *v. n.* [Used by *Spenser*, for *poise*.]
To balance.—

Ne was it island then, ne was it *pays'd*

Amid the ocean waves.

Spenser.

* **PAYSER**. *n. f.* [for *poiser*.] One that weighs.
—To manage this coinage, porters bear the tin,
payzers weigh it. *Carew*.

PAYTA. See **PAITA**.

(1.) **PAZ**, or **LA PAZ**, a province and arch-
bishopric of Peru, in Buenos Ayres or Chaticos,
full of mountains, which are supposed to abound
with gold; for a crag of one of them, called *Il-
limani*, being broken off some years ago, by a flash
of lightning, such a quantity of gold was found
among the fragments, that it was sold for some
time after at 8 dollars per ounce. But the tops
of these mountains being constantly covered with
snow and ice, no attempt has been made to open
a mine. In 1730, an Indian, while bathing in a
river, near the city, found a piece of gold so
large, that the Marquis of Castel Fuerte gave him
12,000 dollars for it, and sent it to the king of
Spain.

(2.) **PAZ**, the capital of the above province, is
seated among the mountains, on the side of a val-
ley, 36 miles from the Cordilleras, through which
a large river flows, which often brings down gold
from the mountains. This city contains a cathed-
ral, 4 churches, a college, an hospital, several
convents, and about 20,000 inhabitants. It lies
180 miles N. of Piata, and 350 SE. of Cusco.
Lon. 64. 30. W. Lat. 15. 59. S.

PAZCUARO,

PAZCUARO, or } a lake of Mexico, on the
PAZQUARO, } E. bank of which the city
is seated. See MEXICO, N^o 1. 2. 15.

PAZZANO, a town of Naples, in Calabria
Ultra, 10 miles E. of Girace.

PAZZY, a town of European Turkey in Ro-
mania, near Gallipoli, with a bishop's see. Lon.
56. 59. E. Lat. 40. 33. N.

(1.) PE, or PEDE SCALA, a town in the Vicer-
tino, one of the Sette Comuni.

(2.) PE, ST, a town of France, in the dep. of
the Upper Pyrenees, 7 miles N. of Argelès, and
6 W. of Lourdes.

(1.) * PEA. *n. f.* [*pīsum*, Latin; *pīsa*, Saxon;
pois, French.] A pea hath a papilionaceous flow-
er, and out of this empalement rises the pointal,
which becomes a long pod full of roundish seeds;
the stalks are fistulous and weak, and seem to per-
forate the leaves by which they are embraced;
the other leaves grow by pairs along the mid rib,
ending in a tendrill. The species are 16: 1. The
greater garden pea, with white flowers and fruit.
2. Hotspur pea. 3. Dwarf pea. 4. French dwarf
pea. 5. Pea with an effluent hulk. 6. Sickle
pea. 7. Common white pea. 8. Green rouncival
pea. 9. Grey pea. 10. Maple rouncival pea.
11. Rofe pea. 12. Spanilh moretto pea. 13.
Marrowfat or Dutch admiral pea. 14. Union pea.
15. Sea pea. 16. Pig pea. *Miller.*

(2.) PEA, in botany. See PISUM.

(3.) PEA CHICK. See CICKER.

(4.) PEA, EVERLASTING. See LATHYRUS, N^o
II, § 1.

(5.) PEA, HEART. See CARDIOSPERMUM.

(6.) PEA, HEATH. See OROBUS.

(7.) PEA, PIGEON. See CYTISUS, N^o I, § 2.

(8.) PEA, SWEET-SCENTED. See LATHYRUS,
N^o II, § 2.

(9.) PEA, TANGIER. See LATHYRUS, N^o II,
§ 3.

(10.) PEA, WINGED. See LOTUS, N^o I, § 6.

(1.) * PEACE. *n. f.* [*paix*, French; *pax*, Lat.]
1. Respite from war.—Preserve us in peace; so
preserve us in peace, that war may be always odi-
ous. *Holyday.*

All the northern world lies hush'd in peace.
Addison.

2. Quiet from suits or disturbances.—The king
commanded that Sherborn should hold his land
in peace. *Davies.* 3. Rest from any commotion.

4. Stillness from riots or tumults.—

Keep peace upon your lives. *Shak.*

—All assembled here in arms against God's peace
and the king's. *Shak.*—Shallow, you have your-
self been a greater fighter, though now a man of
peace. *Shak.* 5. Reconciliation of differences.—

—Let him make peace with me. *Isaiab xxvii. 5.*

6. A state not hostile.—If I have rewarded evil
unto him that was at peace with me, let the ene-
my persecute my soul. *Psaln vii. 4.*—There be
two false peaces or unities. *Bacon.* 7. Rest; quiet;
content; freedom from terror; heavenly rest.—

Well, peace be with him, that hath made us
heavy!

—Peace be with us, lest we be heavier! *Shak.*

—Peace be unto thee, fear not. *Judg. vi. 23.*

The God of hope fill you with all joy and peace

in believing. *Rom. xv. 13.*—Religion directs us
rather to secure inward peace than outward ease.
Tillotson. 8. Silence; suppression of the thoughts.—

'Twill out—I peace!

No, I will speak as liberal as the air. *Shak.*

—He asked in scorn one of the examinees, who
was a freed servant of Scribonianus; I pray, Sir,
if Scribonianus had been emperor, what would
you have done? he answered, I would have stood
behind his chair and held my peace. *Bacon.*

She said; and held her peace. *Dryden.*

9. [In law.] That general security and quiet which
the king warrants to his subjects, and of which
he therefore avenges the violation; every forcible
injury is a breach of the king's peace.

(2.) * PEACE, interjection. A word commanding
silence.—Peace! fear, thou comest too late, when
already the arm is taken. *Sidney.*—

Hark! peace!

It was the owl that shriek'd. *Shak.*

Peace! good reader do not weep;

Peace! the lovers are asleep. *Craslow.*

But peace! I must not quarrel with the will

Of highest satisfaction. *Milton.*

Silence, ye troubled waves, and, thou deep,

peace!

Said then th' omniscient word. *Milton.*

I prythee peace!

Perhaps the thinks they are too near of blood.

Dryden.

(3.) PEACE, in geography, an island near the
coast of Nova Scotia; a little to the S. of Mira-
chi Point.

(4.) PEACE, a river of N. America, which runs
into Slave River, 20 miles N. of Lake Athapaf-
cow.

(5.) PEACE, TEMPLE OF, a celebrated temple
at Rome, which was consumed by fire A. D. 191;
produced, as some writers suppose, by a slight
earthquake, for no thunder was heard at the
time. Dio Cassius, however, supposes that it be-
gan in the adjoining houses. Be that as it will,
the temple, with all the surrounding buildings,
were reduced to ashes. That magnificent struc-
ture had been raised by Vespasian after the de-
struction of Jerusalem, and enriched with the
spoils and ornaments of the temple of the Jews.
The ancients speak of it as one of the most stately
buildings in Rome. There men of learning used
to hold their assemblies, and lodge their writings,
as many others deposited their jewels, and what-
ever else they esteemed of great value. It was
likewise made use of as a kind of magazine for the
spices brought by the Roman merchants out of
Egypt and Arabia; so that many rich persons
were reduced to beggary, all their valuable effects
and treasures being consumed in one night, with
the temple.

* PEACEABLE. *adj.* [from peace.] 1. Free from
war; free from tumult.—The reformation of Eng-
land was introduced in a peaceable manner by the
supreme power in parliament. *Swift.* 2. Quiet;
undisturbed.—The laws were first intended for
the reformation of abuses and peaceable continu-
ance of the subject. *Spenser.*

Lie, Philo, untouch'd on my peaceable shelf.

Prior.

3. Not

3. Not violent; not bloody.—The Chaldeans flattered both Cæsar and Pompey with long lives and a happy and *peaceable* death; both which fell out extremely contrary. *Hale*. 4. Not quarrellome; not turbulent.—The most *peaceable* way for you, if you do take a thief, is to let him shew himself. *Shak.*—These men are *peaceable*. *Genesis* xxxiv. 21.

* **PEACEABLENESS.** *n. f.* [from *peaceable*.] Quietness; disposition to peace.—Plant in us all those precious fruits of piety, justice, and charity, and *peaceableness*. *Hammond*.

* **PEACEABLY.** *adv.* [from *peaceable*.] 1. Without war; without tumult.—

It should to her remain,

Who *peaceably* the same long time did weld.

Spenser.

2. Without tumults or commotion.—The balance of power was provided for, else Pisistratus could never have governed so *peaceably*. *Swift*. 3. Without disturbance.—

Disturb him not, let him pass *peaceably*. *Shak.*

* **PEACEFUL.** *adj.* [*peace* and *full*.] 1. Quiet; not in war; a poetical word.—

Peaceful Italy involv'd in arms. *Dryden*.

2. Pacific; mild.—

As one disarm'd, his anger all he lost;

And thus with *peaceful* words uprais'd her soon.

Milton.

The *peaceful* power that governs love. *Dryd.*

3. Undisturbed; still; secure.—

Succeeding monarchs heard the subjects cries,
Nor saw displeas'd the *peaceful* cottage rise. *Pope*.

* **PEACEFULLY.** *adj.* [from *peaceful*.] 1. Without war; 2. Quietly; without disturbance.

Our loved earth, where *peacefully* we slept.

Dryden.

3. Mildly; gently.

* **PEACEFULNESS.** *n. f.* [from *peaceful*.] Quiet; freedom from war or disturbance.

* **PEACEMAKER.** *n. f.* [*peace* and *maker*.] One who reconciles differences.—

Blessed are the *peacemakers*.

Shak.

Think us,

Those we profess, *peacemakers*, friends and servants.

Shak.

* **PEACE-OFFERING.** *n. f.* [*peace* and *offer*.] Among the Jews, a sacrifice or gift offered to God for atonement and reconciliation for a crime or offence.—A sacrifice of *peace-offering* offer without blemish. *Lev.* iii. 1.

* **PEACEPARTED.** *adj.* [*peace* and *parted*.] Disunited from the world in peace.—

We should prophane the service of the dead,

To sing a requiem, and such rest to her

As to *peaceparted* souls.

Shak. Hamlet.

(1.) * **PEACH.** *n. f.* [*pesche*, Fr. *malum persicum*, Lat.] A tree and fruit.—In his left hand a handful of millet, withal carrying a cornucopie of ripe *peaches*, pears, and pomegranates. *Peacham*.—

The sunny wall,

Presents the downy *peach*. *Thomson's Autumn*.

(2.) **PEACH.** See *AMYGDALUS*, § 3. 4.

(3.) **PEACH WOLF's**, a species of *SOLANUM*.

* **TO PEACH.** *v. n.* [Corrupted from *impeach*.]

To accuse of some crime.—If you talk of *peaching*, I'll *peach* first, and see whose oath will be believed. *Dryd.*

* **PEACH-COLOURED.** *adj.* [*peach* and *colour*.] Of

a colour like a peach.—One Mr Caper comes to jail at the suit of Mr Threepile the mercer, for some four suits of *peach-coloured* fatten, which now *peaches* him a beggar. *Shak. Meas. for Meas.*

* **PEACHICK.** *n. f.* [*pea* and *chick*.] The chicken of a peacock.—Does the snivelling *peachick* think to make a cuckold of me? *Soutbern*.

(1.) * **PEACOCK.** *n. f.* [*pavus*, Saxon; *pavo*; Lat.] Of this word the etymology is not known: perhaps it is *peak* cock, from the tuft of feathers on its head; the peak of women being an ancient ornament; if it be not rather a corruption of *beac-cog*, Fr. from the more striking lustre of its (spangled train).] A fowl eminent for the beauty of its feathers, and particularly of his tail.—

Let frantic Talbot triumph for a while;

And, like a *peacock*, sweep along his tail. *Shak.*

—The birds that are hardest to be drawn, are the tame birds; as cock, turkey-cock and *peacock*. *Peacham*.—

The *peacock*, not at thy command, assumes

His glorious train.

Sandys.

The *peacock's* plumes thy tackle must not fail.

Gay.

(2.) **PEACOCK**, in ornithology. See *PAVO*, N° III.

(3.) **PEACOCK FISH**, in ichthyology, *Pinna an radiis 55, caudali falcati*. The body is of various colours; the fin of the anus has 55 streaks, and its tail is in the form of a crescent. The head is without scales; it is brown upon the upper part, yellow above the eyes, and of a silver colour on the sides. The back is round, and adorned with beautiful blue streaks in a serpentine form; and the belly bright as silver. The fins of the breast are round, and, like those of the belly, have a yellow ground with a grey border; that of the back is of a violet colour; that of the anus is straw coloured; and, lastly, that of the tail is yellow on the sides, red towards the middle, and bordered with a deep blue. Its length is not known. There is a variety of this fish found only in the Indian seas, and therefore called the *Indian Peacock fish*; which is thus described in the language of Linnæus: *Pavo pinna caudali forcipata: spinis dorsalis 14: ocello ceruleo pone oculos*. It has the fin of its tail forked; 14 sharp points or prickles on the back, with a round blue streak behind the eyes. The body of this fish is of an elliptical form; the head is covered with scales to the tip of the snout; the two jaws are armed with long and sharp teeth; the ball of the eye is black, and the iris of a white colour with a mixture of green. At the insertion of the fins of the belly is found a bony substance. The head, back, and sides, are of a yellow colour, more or less deep, and covered with lines or streaks of sky blue. These colours are so agreeably mixed, that they resemble the elegance of the peacock's tail.

PEAGE, a town of France, in the dep. of Drome, on the S. bank of Isere, opposite Romans.

(1.) * **PEAHEN.** *n. f.* [*pea* and *hen*; *pava*, Lat.] The female of the peacock.

(2.) **PEAHEN.** See *PAVO*, N° III.

(1.) * **PEAK.** *n. f.* [*pear*, Saxon; *pique*; *pic*, Fr.] 1. The top of a hill or eminence.—

Thy sister seek,

Or on Meander's bank or Latmus' *peak*. *Prior*

2.

Any thing acuminate. 3. The rising fore part of a head-dress.

(2.) **PEAK**, a mountain of Ireland, in Cork, Munster; in which there are several subterraneous caverns, wherein a great number of human skeletons were discovered in 1755.

(3.) **PEAK BAY**, a bay on the S. coast of Jamaica. Lon. 76. 58. W. Lat. 17. 59. N.

(4.) **PEAK OF DERBYSHIRE**, a chain of very high mountains in Derby, famous for the mines they contain, and for their remarkable caverns. The most remarkable of these are Pool's-hole and Elden-hole. The former is a cave at the foot of a high hill called *Caitmoss*, so narrow at the entrance that passengers are obliged to creep on all-fours; but it soon opens to a considerable height, extending to above a quarter of a mile, with a roof somewhat resembling that of an ancient cathedral. By the petrifying water continually dropping in many parts of the cave, are formed a variety of curious figures and representations of the works both of nature and art. There is a column here as clear as alabaſter, which is called *The Queen of Scots Pillar*, because Q. Mary is said to have proceeded thus far when she visited the cavern. After sliding down the rock a little way, is found the dreary cavity turned upwards: following its course, and climbing from crag to crag, the traveller arrives at a great height, till the rock, closing over his head on all sides, puts an end to any further subterraneous journey. Just at turning to descend, the attention is caught by a chasm, in which is seen a candle glimmering at a vast depth underneath. The guides say, that the light is at a place near Mary Queen of Scots pillar, and no less than 80 yards below. It appears frightfully deep indeed to look down; but perhaps does not measure any thing like what it is said to do. If a pistol is fired by the Queen of Scots pillar, it would make a report as loud as a cannon. Near the extremity there is a hollow in the roof, called the *Needle's Eye*; in which if a candle is placed, it will represent a star in the firmament to those who are below. At a little distance from this cave is a small clear stream consisting of hot and cold water, so near each other, that the finger and thumb of the same hand may be put, the one into the hot water and the other into the cold. Elden-hole is a dreadful chasm in the side of a mountain; which, before the end of the 17th century, was thought to be altogether unfathomable. (See **ELDEN-HOLE**.) In 1699 Captain Sturmy, defended by ropes fixed at the top of an old lead-ore pit, 4 fathoms almost perpendicular, and from thence 3 fathoms more obliquely, between 2 great rocks. At the bottom of this he found an entrance into a very spacious cavern, whence he descended along with a miner for 25 fathoms perpendicular. At last they came to a great water, which he found to be 20 fathoms broad and 8 deep. As they walked by the side of this water, they observed a hollow in the rock some feet above them. The miner went into this place, which was the mouth of another cavern; and walked for about 70 paces in it. The floor of these caverns is a kind of white stone enamelled with lead ore, and the roofs are encrusted with shining spar. On his return from this subterranean

journey, Captain Sturmy was seized with a violent head-ach, which, after continuing four days, terminated in a fever, of which he died in a short time.

(5.) **PEAK OF TENERIFFE**. See **TENERIFFE**.

(6.) **PEAK**, ST GEORGE'S, or PICO. See **AZORES**.

(7.) **PEAK'S HOLE**, and **POOL'S HOLE**, called also the *Devil's A—je*, two remarkable horizontal springs under mountains; the one near Castletown, the other just by Buxton. They seem to have owed their origin to the springs which have their current through them; when the water had forced its way through the horizontal fissures of the strata, and had carried the loose earth away with it, the loose stones must fall down of course: and where the strata had few or no fissures, they remained entire; and so formed these very irregular arches, which are now so much wondered at. The water which passes through Pool's Hole is impregnated with particles of lime stone, and has incruſted the whole cavern in such a manner that it appears as one solid rock.

(8.) **PEAKS OF OTTER**, the highest parts of the BLUE MOUNTAINS, in N. America. They are 4000 feet above the sea level.

* **TO PEAK**. v. n. [*pequeno*, Spanish, *little*, perhaps *lean*: but I believe this word has some other derivation: we say a withered man has a sharp face; Falstaff dying, is said to have a *nose as sharp as a pen*: from this observation, a sickly man is said to *peak* or grow acuminate, from *pique*] 1. To look sickly.—

Weary se'nights, nine times nine,
Shall he dwindle, *peak*, and pine. *Shak. Macb.*
2. To make a mean figure; to sneak.—
I, a dull and muddy mettled rascal, *peak*,
Like John a dreams, unpregnant of my cause. *Shak.*

—The *peaking* cornuto her husband, dwelling in a continual larum of jealousy, comes in the instant of our encounter. *Shak.*

* **PEAL**. n. f. [Perhaps from *pello*, *pellere*, *tympana*.] 1. A succession of loud sounds: as, of bells, thunder, cannon, loud instruments.—They were saluted by the way, with a fair *peal* of artillery from the tower. *Hayward*.—It shall be the last *peal* to call the judgments of God upon men. *Bacon's Essays*.—Woods of oranges will smell into the sea perhaps 20 miles; but what is that, since a *peal* of ordnance will do as much? *Bacon*.—

A *peal* shall rouse their sleep. *Milt. Par. Reg.*
Vanquish'd with a *peal* of words, O weakness!
Gave up my fort of silence to a woman. *Milt.*
Peals of shouts that rend the heav'ns. *Dryden*.
Oh! for a *peal* of thunder that would make
Earth, sea, and air, and heaven, and Cato
tremble! *Addison*.

2. It is once used by *Shakespeare* for a low dull noise, but improperly.—

Ere to black Hecate's summons
The shard born beetle with his drowsy hums,
Hath rung night's yawning *peal*, there shall be
done

A deed of dreadful note. *Shak. Macb.*
(1.) * **TO PEAL**. v. n. [from the noun.] To play solemnly and loud.—

Let the *pealing* organ blow,

T.

To the full-voic'd quire below.

Milton.

The *pealing* organ, and the pausing choir.

Tickel.

(2.) * To PEAL. *v. a.* 1. To assail with noise.—

Nor was his ear less *peal'd*

With noises loud and ruinous.

Milton.

2. To stir with some agitation: as, to *peal* the pot, is when it boils to stir the liquor therein with a ladle. *Ainsf.*

(1.) PEAN, in heraldry, is when the field of a coat of arms is sable, and the powderings or.

(2.) PEAN. See PEAN.

PEAPS, William, a dramatic writer, in the reign of Charles I. He studied at Eton, and wrote a piece entitled, *Love in its Extasy, or the large Prerogative*: 410, 1649.

(1.) * PEAR. *n. f.* [*poire*, French; *pyrum*, Lat.] The species are 84: 1. Little musk pear, commonly called the supreme. 2. The Chio pear, commonly called the little bastard musk pear. 3. The hasting pear, commonly called the green chisfel. 4. The red muscadelle; it is also called the fairest. 5. The little muscat. 6. The jargonelle. 7. The Windfor pear. 8. The orange musk. 9. Great Blanket. 10. The little blanket pear. 11. Long stalked blanket pear. 12. The skinless pear. 13. The musk robin pear. 14. The musk drone pear. 15. The green orange pear. 16. Caffolette. 17. The Magdalene pear. 18. The great onion pear. 19. The August muscat. 20. The rose pear. 21. The perfumed pear. 22. The summer bon chrétien, or good christian. 23. Salviati. 24. Rose water pear. 25. The choaky pear. 26. The russet pear. 27. The prince's pear. 28. The great mouth water pear. 29. Summer burgamot. 30. The Autumn burgamot. 31. The Swiss burgamot. 32. The red butter pear. 33. The dross's pear. 34. The long green pear; it is called the Autumn month water pear. 35. The white and grey monsieur John. 36. The flowered muscat. 37. The vine pear. 38. Rouffelle pear. 39. The knave's pear. 40. The green sugar pear. 41. The marquis's pear. 42. The burnt cat; it is also called the Virgin of Xantonet. 43. Le Befidery; it is so called from Heri, which is a forest in Bretagne between Bennes and Nantz, where this pear was found. 44. The crafane, or burgamot crafane; it is also called the flat butter pear. 45. The lansac, or dauphin pear. 46. The dry martin. 47. The villain of Anjou; it is also called the tulip pear and the great orange. 48. The large stalked pear. 49. The Amadot pear. 50. Little lard pear. 51. The good Lewis pear. 52. The Colmar pear; it is also called the manna pear, and the late burgamot. 53. The winter long green pear, or the landry wilding. 54. La Virgoule, or La virgouleuse. 55. Poire d'Ambrette; this is so called from its musky flavour, which resembles the smell of the sweet sultan flower, which is called Ambrette in France. 56. The winter thorn pear. 57. The St Germain pear, or the unknown of la Fare; it being first discovered upon the banks of a river called by that name in the Parish of St Germain. 58. The St Augustine. 59. The Spaniard bon chrétien. 60. The pound pear. 61. The wilding of Cassoy, a forest in Brittany, where it was discovered. 62. The lord Martin pear.

63. The winter citron pear; it is also called the musk orange pear in some places. 64. The winter roselle. 65. The gate pear; this was discovered in the province of Poitou, where it was much esteemed. 66. Bergamotte Rugi; it is also called the Easter burgamot. 67. The winter bon chrétien pear. 68. Catillac or cadillac. 69. La pastourelle. 70. The double flowering pear. 71. St Martial; it is also called the angelic pear. 72. The wilding of Chaumontelle. 73. Carmelite. 74. The union pear. 75. The aurate. 76. The fine present; it is also called St Sampson. 77. Le rouffellet de Rheims. 78. The summer thorn pear. 79. The egg pear; so called from the figure of its fruit, which is shaped like an egg. 80. The orange tulip pear. 81. La manfuette. 82. The German muscat. 83. The Holland burgamot. 84. The pear of Naples. *Miller*.—They would whip me with their fine wits, till I were as crest fallen as a dried pear. *Shak. Merch. of Venice*.—August shall bear the form of a young man, of a choleric aspect, upon his arm a basket of pears, plums, and apples. *Peach*.—

The juicy pear

Lies in a soft profusion scatter'd round. *Thomf.*

(1.) PEAR, in botany. See PYRUS.

(3.) PEAR, ALLIGATOR. } See LAURUS, N° 9.

(3.) PEAR, AVOCADO. }

(4.) PEAR, BACHELOR'S, a species of SOLANUM.

(5.) PEAR, GARLICK. See CRATEVA, N° 2.

(6.) PEAR, PRICKLY, a species of CACTUS.

PEARCE, Dr Zachary, Bp. of Rochester, was the son of a distiller in High Holborn. He was born in 1690, and educated at Westminster, where he was distinguished by his merit, and elected one of the king's scholars. In 1710, when he was 20 years old, he was elected to Trinity College Cambridge. During the first years of his residence at the university, he wrote Essays, some of which are inserted in the *Guardian* and *Spektator*. In 1716, he published his edition of *Cicero de Oratore*, and, luckily dedicated it to Lord Chief-Justice Parker (afterwards Earl of Macclesfield), to whom he was a stranger. This laid the foundation of his future fortune; for Lord Parker recommended him to Dr Bentley, master of Trinity, to be made one of the fellows. In 1717, Mr Pearce was ordained at the age of 27; In 1718, Lord Parker was appointed chancellor, and invited Mr Pearce to live with him as chaplain. In 1719, he was instituted rector of Stapleford Abbots, in Essex; in 1720, of St Bartholomew, worth 400*l.* per annum: In 1722, he was presented to St Martin's in the Fields. In 1723, he married Miss Adams, the daughter of a distiller, with a considerable fortune, who lived with him in the highest connubial happiness. Mr Pearce soon attracted the notice and esteem of persons in the highest stations and of the greatest abilities. In 1724, the degree of D.D. was conferred on him by Abp. Wake. The same year he dedicated to the earl of Macclesfield his edition of *Longinus on the Sublime*, with a new Latin version and notes. When the church of St Martin's was rebuilt, Dr Pearce preached a sermon at the consecration, which he printed, and accompanied with an *Essay on the origin and progress of Temples*, traced from the rude stones which

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were first used for altars to the noble structure of Solomon, which he considers as the first temple completely covered. Dr Pearce was appointed dean of Winchester in 1739; and in 1744 he was elected prolocutor of the lower house of convocation for Canterbury. He was consecrated Bp. of Bangor, Feb. 12, 1748. Upon the death of Bp. Wilcocks he was promoted to the see of Rochester and deanery of Westminster in 1756. In 1768 he resigned the deanery; in 1773 he lost his lady; and, after some months of lingering decay, he died at Little Ealing, June 29, 1774, aged 85. This eminent prelate distinguished himself in every part of his life by the virtues proper to his station. His literary abilities, and application to sacred and philological learning, appear by his works; the principal of which are, 1. A letter to the clergy of the church of England, on occasion of the Bp. of Rochester's commitment to the Tower; 2d edit. 1732. 2. Miracles of Jesus vindicated, 1737 and 1738. 3. A review of the text of Milton, 1733. 4. Two letters against Dr Middleton, occasioned by the Doctor's letter to Waterland, on the publication of his treatise, entitled, *Scripture Vindicated*; 3d edit. 1752. And, 5. since his death, A commentary with notes on the four Evangelists and the Acts of the Apostles, with a new translation of St Paul's first Epistle to the Corinthians, with a paraphrase and notes, have been published, with his life prefixed, from original MSS. in 2 vols 4to.

(1.) * PEARCH. *n. f.* [*peritica*, Lat.] 1. A long pole for various uses. 2. A kind of fish.

(2.) PEARCH, in ichthyology. See PERCA. The perch affords good sport for the angler. The best time for their biting is when the spring is over, and before the heats of summer come on. At this time they are very greedy; and the angler, with good management, may take at one standing all that are in the hole, be they ever so many. The proper baits are minnows or young frogs; but the worm called the *brandling*, well scoured, is also excellent at all times of the year. When the perch bites, he should always have a great deal of time allowed him to swallow the bait. The perch will bite all day if the weather be cloudy; but the best time is from 8 to 10 A. M. and from 3 to 6 P. M. The perch is very abstemious in winter, and will seldom bite in this season: if he does at all, it is in the middle of the day; at which time indeed all fish bite best. If the bait be a minnow, which is the bait that affords most diversion to the angler, it must be fastened to the hook alive, by putting the hook through the upper lip or back-fin; it must be kept at about mid-water, and the float must be a quill and a cork, that the minnow alone may not be able to sink it. The line must be of silk, and strong; and the hook armed with a small and fine wire, that if a pike should take the bait, as is not unfrequently the case, he may be taken. The way to carry the minnows or small gudgeons alive for baits is this: a tin pot is to be provided, with holes in the lid, and filled with water; and the fish being put in this, the water is to be changed once in a quarter of an hour by the holes, without taking off the lid at any time, except when the bait is to be taken out. A small casting net, made for these little fish, should be taken out with the perch-tackle; and

one or two casts of this will take baits enough for the day without any farther trouble. When the bait is a frog, the hook is to be fastened to the upper part of the leg. The best place for the fishing for perch is in the turn of the water near some gravelly scour. A place of this kind being pitched upon, it should be baited over-night with lobworms chopped to pieces; and in the morning, on going to it, the depth is to be regularly plumbed, and then the hook is to be baited with the worm or other bait; and as it drags along, the perch will soon seize upon it.

(3.) PEARCH GLUE, a kind of glue, of remarkable strength and purity, made from the skins of perches.

* PEARCH-STONE. *n. f.* [from *perch*, and *stone*.] A sort of stone.

PEAR-GLASS, or rather *Glass Pear*, is synonymous with GLASS DROPS, or GLASS TEARS, *Prince Rupert's Drops*. See RUPERT'S DROPS.

(1.) * PEARL. *n. f.* [*perle*, Fr. *perla*, Spanish: supposed by *Salmasius* to come from *spherula*, Latin.] 1. *Pearls*, though esteemed of the number of gems by our jewellers, are but a distemper in the creature that produces them: the fish in which pearls are most frequently found is the East Indian *berber* or *pearl oyster*: others are found to produce pearls; as the common oyster, the muscle, and various other kinds; but the Indian pearls are superior to all. Some pearls have been known of the size of a pigeon's egg: as they increase in size, they are less frequent and more valued. The true shape of the pearl is a perfect round; but some of a considerable size are of the shape of a pear, and serve for ear-rings. *Hill*.—A pearl-julep was made of a distilled milk. *Wifeman*.—

Flowers purified, blue and white,
Like sapphire, *pearl*, in rich embroidery. *Shak*.
—Cataracts *pearl*-coloured, and those of the colour of burnished iron, are esteemed proper to endure the needle. *Sharp*. 2. [Poetically.] Any thing round and clear, as a drop.—

Dropping liquid pearl,
Before the cruel queen, the lady and the girl
Upon their tender knees begg'd mercy. *Drayt*.
(2.) * PEARL. *n. f.* [*albugo*, Lat.] A white speck or film growing on the eye. *Ainsl*.

(3.) PEARL, in geography, an island in the Gulf of Mexico, near the mouth of the Mississippi; 7 miles long and 4 broad.

(4.) PEARL, another island of the W. Indies, in Lon. 79. 13. W. Lat. 14. 53. N.

(5.) PEARL, a river of W. Florida, which runs into Lake Pontchartrain, 13 m. S.W. of New Orleans.

(6.) PEARL, a river of Georgia, which rises in the W. part of the Chactaw country, runs S. into the Gulf of Mexico, into which it falls by several mouths, at the E. end of the Regolets. It is navigable for above 150 miles.

(7.) A PEARL (§ 1. *def.* 1.), in natural history, is a hard, white, shining body, usually roundish, found in a testaceous fish resembling an oyster. (See MYA, N° 2.) Pearls are analogous to the bezoars and other stony concretions in several animals of other kinds. The fish in which these are usually produced is the East Indian pearl-oyster. Besides this shell, there are many others that are found to produce pearls; as the common oyster, the muscle, and several others, the pearls of which are often

often very good; but those of the true Indian *berberi*, or pearl oyster, are in general superior to all. The small or seed pearls, also called *ounce pearls*, from their being sold by the ounce and not by tale, are vastly the most numerous and common. We have Scotch pearls frequently as big as a little tare, some as big as a large pea, and some few of the size of a horse bean; but these are usually of a bad shape, and of little value in proportion to their weight. Philip II. of Spain had a pearl perfect in its shape and colour, and of the size of a pigeon's egg. Their colour ought to be a pure white; and that not a dead and lifeless, but a clear and brilliant one: they must be perfectly free from any foulness, spot, or stain; and their surfaces must be naturally smooth and glossy; for they bring their natural polish with them, which art is not able to improve. All pearls are formed of the matter of the shell, and consist of a number of coats spread with perfect regularity one over another, in the manner of the several coats of an onion, or like the several strata of the stones found in the bladders or stomachs of animals, only much thinner.

(8.) PEARL FISH. See MYA, N° 2. Very little is known of the natural history of the pearl fish. Mr Bruce says, that, as far as he has observed, they are all stuck upright in the mud by an extremity: the muscle by one end, the pinna by the small sharp point, and the third by the hinge or square part which projects from the round. "In shallow and clear streams (says Mr Bruce). I have seen small furrows or tracks upon the sandy bottom, by which you could trace the muscle from its last station; and these not straight, but deviating into traverses and triangles, like the course of a ship in a contrary wind laid down upon a map, probably in pursuit of food. The general belief is, that the muscle is constantly stationary in a state of repose, and cannot transfer itself from place to place. This is a vulgar prejudice, and one of those facts that are mistaken for want of sufficient pains or opportunity to make more critical observations. Others, finding the first opinion a false one, and that they are endowed with power of changing place like other animals, have, upon the same foundation, gone into the contrary extreme, so far as to attribute swiftness to them, a property surely inconsistent with their being fixed to rocks." Our author informs us, that the muscles found in the salt springs of Nubia likewise travel far from home, and are sometimes surprised, by the ceasing of the rains, at a greater distance from their beds than they have strength and moisture to carry them. He assures us, that none of the pearl-fish are eatable; and that they are the only fish he saw in the Red Sea that cannot be eaten. But no attempt towards motion or change of place has ever been observed in the pearl-fish of Perthshire. The pearl-fish has been hitherto considered as an *ascidia* (see MYTILUS); but a late author, who paid great attention to the pearl fishery at Ceylon, denies this, and says it has no resemblance to the *ascidia*. He supposes it a distinct genus. The pearls are only found in the soft part of the animal, on both sides of the mouth. From the shells a judgment may be formed, whether they contain pearls. Those

which have a thick calcareous crust on them, to which *Serpula*, *Tubuli marini*, *Cristagalli*, *Madrepores*, *Milipores*, *Spongiae*, and other zoophytes, adhere, commonly contain the best pearls; the smooth ones either none or very small ones.

(9.) PEARLS, DIFFERENT COLOURS, KINDS, AND VALUE OF. The colours of pearls are different according to the shells in which they are found. There are 3 kinds of bivalve shells chiefly sought after by the pearl fishers. The 1st is a kind of muscle chiefly found in the N. end of the Red Sea. It produces pearls of a fine shape and excellent lustre, but seldom of that very fine colour which enhances their price. The 2d kind, called PINNA, is broad and semicircular at the top, and sharp at the hinge, the outside rough and red, the inside lined with mother of pearl. It produces pearls having the reddish cast of the inner shell of the pinna, called *mother of pearl*; which confirms the opinion of Reaumur, that the pearls are formed from the glutinous fluid which makes the first rudiments of the shell; and this kind of pearl is found to be more red as it is formed nearer the broad part of the shell, which is redder than the other end. The 3d sort of shell resembles the oyster, and produces pearls of extreme whiteness. The value of these commodities depends upon their size, regularity of form, whether round or not, weight, smoothness, colour, and the different shades of that colour. The pearl fishers say, that when the shell is smooth and perfect, they never expect to find any pearls, but always do so when it has begun to be deformed and distorted. Hence it would seem, that as the fish turned older, the vessels containing the juice for forming the shell, and keeping it in its vigour, grew weak and ruptured; and thence, from this juice accumulating in the fish, the pearl was formed, and the shell brought to decay, as supposed by Mr Reaumur. If this be the case, it ought to be known by the form of the shell whether the pearl is large or small; and thus the smaller ones being thrown back into the sea, a constant crop of large pearls might be obtained. Pearls were anciently rated at very extravagant prices. Servilia, the mother of Marcus Brutus, presented one to Cæsar of the value of 50,000l. of our money; and Cleopatra dissolved one worth 250,000l. in vinegar, which she drank at a supper with Mark Antony!

(10.) PEARLS, FISHERIES OF. There are many rivers, great and small, in Eastern Tartary, considerable for pearl fishery; but these pearls, though much esteemed by the Tartars, would be little valued by Europeans, on account of their defects in shape and colour. The emperor Kang-hi had several chaplets or strings of these pearls, each containing 100, which were very large, and exactly matched. There are many rivulets in Livonia which produce pearls almost equal in size and clearness to the oriental ones. There are several fisheries both on the E. and W. coasts of Africa; the most considerable of which lie round some small islands, over-against the kingdom of Sofala; but the people thus employed, instead of exposing the oysters to the warmth of the sun, which would induce them to open, lay them upon the embers; by which absurd method, those pearls which they catch contract a dull kind of redness, which

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robs them of their natural lustre as well as of their value. Pearl-fishing is performed by the women as well as the men; both being equally expert. In the sea of California also there are very rich pearl-fisheries. The most esteemed pearls are those of Asia and the E. coast of Africa. In the kingdom of Madura there are many pearl fisheries. (See TUKURIN.) In Japan likewise there are found pearls of great price. Pearls are met with in all parts of the Red Sea, in the Indian Ocean, on the low part of the coast of Arabia Felix named *Baharen*, adjoining to the Persian Gulf. They are likewise found on the low coast about Gunibroom E. of the Persian Gulf; and many of the finest kind are met with on the coast of Ceylon. They are most plentiful in the Baharen, between the coast of Arabia Felix and Ormus, whence they are transported to Aleppo, then sent to Leghorn, and then circulated through Europe. Linnæus discovered a method of putting the pearl muscles into a state of producing pearls at his pleasure. (See MYA, N° 2.) In Scotland, especially to the northward, in all rivers running from lakes, there are found muscles that have pearls of more than ordinary merit, though seldom of large size. In this country there was a very great fishery of pearls, got out of the fresh-water muscles. (See MYA, N° 2.) From 1761 to 1764, 10,000*l.* worth were sent to London, and sold from 10*s.* to 2*l.* 16*s.* per ounce. One pearl was taken there that weighed 33 grains. But this fishery is at present exhausted, from the avarice of the undertakers: it once extended as far as Loch-Tay.

(11.) PEARLS, MANNER OF FISHING FOR, IN THE EAST INDIES.—There are two seasons for pearl-fishing: the first is in March and April, and the last in Aug. and Sept.; and the more rain there falls in the year, the more plentiful are these fisheries. At the beginning of the season there are sometimes 250 barks on the banks; the larger barks have two divers, and the smaller one. As soon as the barks arrive at the place where the fish lie, and have cast anchor, each diver binds a stone, six inches thick and a foot long, under his body; which serves him as a ballast, prevents his being driven away by the motion of the water, and enables him to walk more steadily under the waves. They also tie another very heavy stone to one foot, by which they are very speedily sent to the bottom of the sea; and as the oysters are usually firmly fastened to the rocks, they arm their hands with leather mittens, to prevent their being wounded in pulling them violently off; but this task some perform with an iron rake. Each diver carries down with him a large net in the manner of a sack, tied to his neck by a long cord, the other end of which is fastened to the side of the bark. This net is to hold the oysters gathered from the rock, and the cord is to pull up the diver when his bag is full, or when he wants air. In this equipage he sometimes precipitates himself 60 feet under water; and as he has no time to lose, he no sooner arrives at the bottom, than he begins to run from side to side, tearing up all the oysters he meets with, and cramming them into his budget. At whatever depth the divers are, the light is so great, that they easily see whatever passes in the sea; and, to their great consterna-

tion, sometimes perceive large sharks, from which all their address in muddying the water, &c. will not always save them, but they unhappily become their prey: and of all the dangers of the fishery, this is one of the greatest and most usual. (See PANAMA, N° 1.) The best divers will not keep under water above two minutes, according to M. Le Beck, though others absurdly affirm, that they will continue half an hour. When they find themselves straitened, they pull the rope to which the bag is fastened, and hold fast by it with both hands: when those in the bark, taking the signal, heave them up into the air, and unload them of their fish; which is sometimes 500 oysters, and sometimes not above 50. Some of the divers need a short respite to recover breath; others jump in again instantly, continuing this violent exercise for several hours. On the shore they unload their barks, and lay their oysters in a vast number of little pits dug in the sand, 4 or 5 feet square, raising heaps of sand over them to the height of a man; and in this condition they are left till the rain, wind, and sun, have obliged them to open, which soon kills them: upon this the shells rot and dries, and the pearls, thus disengaged, fall into the pit on their taking out the shells. After clearing the pits of the grosser filth, they sift the sand several times in order to find the pearl: but, whatever care they take, they always lose a great number. After cleaning and drying the pearls, they are passed through a kind of sieve, according to their sizes; the smallest are then sold by weight as *seed-pearls*, and the rest put up to auction, and sold to the highest bidder.

(12.) PEARLS, METHOD OF FISHING FOR, IN PERTHSHIRE. The rev. Dr James Robertson, in his Statistical Account of Callander, describes the pearl fishery as practised in this county, as follows: "They are fished with a kind of spear, consisting of a long shaft, and shod at the point with two iron spoons, having their mouths inverted: their handles are long and elastic, and joined at the extremity, which is formed into a socket, to receive the shaft. With this machine in his hand, by way of staff, the fisher, being often up to the chin in water, gropes with his feet for the muscles, which are fixed in the mud and sand by one end, and presses down the iron spoons upon their point; so that by the spring in the handles, they open to receive the muscle, hold it fast, and pull it up to the surface of the water. He has a pouch or bag of net-work hanging by his side, to carry the muscles till he come a-shore, where they are opened. The operation is much easier in shallow water." *Stat. Acc.* XI, 599

(13.) PEARLS, METHOD OF MAKING ARTIFICIAL. Attempts have been made to take out stains from pearls, and to render the foul opaque-coloured ones equal in lustre to the oriental. Abundance of processes are given for this purpose in books of secrets and travels; but they are very far from answering what is expected from them. Pearls may be cleaned indeed from any external foulnesses by washing and rubbing them with a little Venice soap and warm water, or with ground rice and salt, with starch and powder-blue, plaster of Paris, coral, white vitriol and tartar, cutler-bone, pumice-stone, and other similar substances

stances; but a stain that reaches deep into the substance of pearls is impossible to be taken out. Nor can a number of small pearls be united into a mass similar to an entire natural one, as some pretend. There are, however, methods of making artificial pearls, in such a manner as to be with difficulty distinguished from the best oriental. The ingredient used for this purpose was long kept a secret; but it is now discovered to be a fine silver-like substance found upon the under side of the scales of the blay or bleak-fish. The scales, taken off in the usual manner, are washed and rubbed with fresh parcels of fair water, and the several liquors suffered to settle: the water being then poured off, the pearly matter remains at the bottom, of the consistence of oil, called by the French *essence d'orient*. A little of this is dropped into a hollow head of bluish glass, and shaken about so as to line the internal surface; after which the cavity is filled up with wax, to give solidity and weight. Pearl-made in this manner are distinguishable from the natural only by their having fewer blemishes.

PEARL-ASH, a kind of fixed alkaline salt, prepared chiefly in America, Germany, Russia, and Poland, by melting the salts out of the ashes of burnt wood; and having reduced them again to dryness, evaporating the moisture, and calcining them for a considerable time in a furnace moderately hot. The goodness of pearl ashes must be distinguished by the uniform and white appearance of them: they are nevertheless subject to a common adulteration, not easy to be distinguished by the mere appearance, which is done by the addition of common salt. In order to find out this fraud, take a small quantity of the suspected salt; and after it has been fostered by lying in the air, put it over the fire in a shovel: if it contains any common salt, a crackling and a kind of slight explosion will take place as the salt grows hot. Pearl-ashes are much used in the manufacture of glass, and require no preparation, except where very great transparency is required, as in the case of looking glass, and the best kind of window-glass. For this purpose dissolve them in four times their weight of boiling water; when they are dissolved, let the solution be put into a clean tub, and suffered to remain there 24 hours or more. Let the clear part of the fluid be then decanted off from the sediment, and put back into the iron pot in which the solution was made; in this let the water be evaporated till the salts be left perfectly dry. Keep those that are not designed for immediate use in stone jars, well secured from moisture and air. Mr Kirwan, who has tried a course of experiments on the alkaline substances used in bleaching, &c. (see *Irisb Trans.* for 1789), tells us, that in 100 parts of the Dantzick pearl-ash, the vegetable alkali amounted to somewhat above 63. His pearl-ash he prepares by calcining a ley of vegetable ashes dried into a salt to whiteness. In this operation, he says, "particular care should be taken that it should not melt, as the extractive matter would not be thoroughly consumed, and the alkali would form such an union with the earthy parts as could not easily be dissolved." He has also given tables of the quantities of ashes and salt obtained from different ve-

getables; and he concludes from them, 1. "That, in general, weeds yield much more ashes, and their ashes much more salt, than woods; and that, consequently, as to salts of the vegetable alkali kind, neither American, Trieste, nor the northern countries, possess any advantage over us. 2. That of all weeds, fumitory produces most salt, and next to it wormwood; but if we attend only to the quantity of salt in a given weight of ashes, the ashes of wormwood contain most. *Trifolium fibrinum* also produces more ashes and salt than fern." See POTASH.

* PEARLED. *adj.* [from *pearl*.] Adorned or set with pearls.—

The water nymphs
Held up their *pearled* wrists, and took her in.
Milton.

* PEARLEYED. *adj.* [*pearl* and *eye*.] Having a speck in the eye.

* PEARLGRASS. PEARLPLANT. PEARLWORT. *n. f.* Plants. *Ainsworth.*

PEARL ISLANDS, a cluster of islands in Panama Bay, 36 miles from the city of Panama: so named from their coasts abounding with pearls. (See PANAMA, N^o 1.) They are low, and abound with wood, water, fruits, fowls, and hogs; and have several good harbours. The northernmost is *Pacbea*, the southernmost *St. Paul's*. Lon. 81. 45. W. Lat. 7. 10. N.

PEARL, MOTHER OF, the shell, not of the pearl oyster, but of the *mytilus margaritiferus*. See MYTILUS, N^o 6. The mother of pearl manufactory is brought to the greatest perfection at Jerusalem. The most beautiful shell of this kind is that of the PINNA; but it is too brittle to be employed in any large pieces of workmanship; whence that kind named *dora* is most usually employed; and great quantities of this are daily brought from the Red Sea to Jerusalem. Of these, all the fine works, the crucifixes, the wafer-boxes, and the beads, are made, which are sent to the Spanish dominions in the New World, and produce a return incomparably greater than the staple of the greatest manufactory in the Old.

PEARL-PLANT, &c. See PEARLGRASS.

* PEARLY *adj.* [from *pearl*.] 1. Abounding with pearls; containing pearls.—

Some in their *pearly* shells at ease, attend.
Milton.

2. Resembling pearls.—

Which when he heard, full *pearly* floods
I in her eyes might view. *Drayton.*
Plains adorned with *pearly* dew. *Dryden.*
For what the day devours, the nightly dew
Shall to the morn in *pearly* drops renew. *Dryd.*

—Another was invested with a *pearly* shell. *Woodes.*
(1.) * PEARMAIN. *n. f.* An apple.—*Pearmain* is an excellent and well known fruit. *Mortimer.*

(2.) PEARMAIN. See PYRUS, N^o 4.

PEARSON, John, a learned English bishop, born at Snoring, in 1613. He was educated at Eton and Cambridge; entered into orders in 1639; and was made prebendary of Netherhaven in the church of Sarum. In 1640 he was appointed chaplain to the lord keeper Finch, and by him presented to Terrington in Suffolk. In 1650 he was made minister of St Clement's, Eastcheap, London. About 1660 he published at London

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An exposition of the Creed, in folio; also, *The Golden Remains of Mr John Hales of Eton*; with a preface, and character, drawn with great elegance. In 1560 he was presented, by Juxon, Bp. of London, to the rectory of St Christopher's in that city; created D. D. at Cambridge; installed prebendary of Ely; archdeacon of Surry; and made master of Jesus college in Cambridge. March 25th 1661, he was appointed Margaret professor of divinity, and in 1662, one of the commissioners for the review of the liturgy. April 14th 1663, he was admitted master of Trinity college in Cambridge; and, in August, resigned his rectory of St Christopher's and prebend of Sarum. In 1667, he was admitted F. R. S. In 1671, he published at Cambridge, in 4to, *Vindiciæ Epistolæ S. Ignatii*, in answer to M. Daillé; to which is subjoined, *Isaacii Vossii epistolæ duæ adversus Davidem Blondellum*. Pearson was appointed successor to Bp. Wilkins in the see of Chester, Feb. 9th 1671-3. In 1682, his *Annales Cyprianici, sive tredecim annorum, quibus S. Cyprian. inter Christianos versatus est, historia chronologica*, was published at Oxford, with Fell's edition of that Father's works. He died at Chester, July 16th 1686.

(1.) * **PEARTREE**. *n. f.* [*pear and tree*.] The tree that bears pears.—The *peartree*, crickets will have to borrow his name of *æg.* fire. *Bacon*.

(2.) **PEAR-TREE**. See **PYRUS**, N° 1.

PEAS. See **PEASBURN**, and **PEATHS**.

(1.) * **PEASANT**. *n. f.* [*paisant*, Fr.] A hind; one whose business is rural labour.—He holdeth himself a gentleman, and scorneth to work, which, he saith, is the life of a *peasant* or churl. *Spenser*.—
I had rather coin my heart, than wring
From the hard hands of *peasants* their vile trash.

Shakspeare.

—The poor *peasants* in the Alpine countries, diversified themselves in the fields. *Brown's Travels*.—'Tis difficult for a *peasant* bred up in the obscurities of a cottage, to fancy in his mind the unseen splendours of a court. *South*.—The citizens bring 2000 men, with which they could make head against 12,000 *peasants*. *Addison*.

(2.) **PEASANTS**, being, in general, secluded from the means and opportunities of luxury and licentiousness, are an order of men among whom a philosopher would look for innocence and simplicity of manners. And, indeed, the peasantry of Great Britain still retain these virtues in a considerable degree. But in many other countries, they are neither so virtuous nor so happy. In most countries, and in most ages of the world, since the conclusion of the patriarchal age, they have been treated as slaves, and their morals of consequence neglected and corrupted. Even in the celebrated state of ancient Sparta, they were subjected to a degree of slavery, almost, if not altogether, as intolerable, as the worst that has been represented of the African slaves in the W. Indies. (See **HELOTS**.)—And in the greater part of modern Europe, they are still considered as slaves, and their persons transferred as property, by the great landed proprietors, along with the soil. Mr Coxe in his *Travels in Russia*, gives a most horrible picture of their ignorance and degeneracy in morals, by incestuous marriages, &c. They are, however, he says, well clothed, comfortably

lodged, and enjoy plenty of wholesome food, by which they acquire great bodily strength. The peasants of Finland are more civilized than the Russians, and differ widely from them in looks, dress, and manners. Those of Sweden are still more improved. They are more honest, in better condition, and possess more of the conveniences of life, both in food and furniture, than those of Poland and Russia. Before the late revolutions, the peasants of Holland and Switzerland were all in a very tolerable condition; not subject to the undisputed controul of a hiring master, they were freemen, and enjoyed in their several stations the blessings of freedom. In Bohemia, Hungary, and a great part of Germany, they are legally slaves, and suffer all the miseries attending such a condition. In Spain and Italy, they are little better. In France, their situation was such as to warrant the first Revolution, and indeed these, and a few others of the lower ranks, seem now to be the only gamers by it.

* **PEASANTRY**. *n. f.* Peasants; rusticks; country people.—

How much low *peasantry* would then be gleaned

From the true seed of honour?

Shak.

—The *peasantry* in France, under a much heavier pressure of want and poverty than the day-labourers of England of the reformed religion, understood it much better than those of a higher condition among us. *Locke*.

PEAS-BRIDGE. See **PEATHS**.

PEAS-BURN, a small river in Berwick-shire; which runs through a ravine into the sea, between Berwick and Dunbar. See **PEATHS**.

* **PEASCOD**, **PEASHELL**. *n. f.* [*pea cod* and *shell*.]

The hulk that contains peas.—

Thou art a sheal'd *peascod*.

Shak.

—I saw a green caterpillar as big as a small *peascod*. *Walton*.—

As *peascods* once I pluck'd, I chanc'd to see

One that was closely fill'd with three times three.

Gay.

(1.) * **PEASE**. *n. f.* [*Pea*, when it is mentioned as a single body, makes *peas*; but when spoken of collectively, as food or a species, it is called *pease*, anciently *peason*, *pisa*, Saxon; *pois*, French; *piso*, Italian; *pisum*, Latin.] Food of pease.—

Sowe *peason* and beans in the wane of the moon.

Tusser.

—*Pease*, deprived of any aromatic parts, are mild and demulcent; but, being full of aerial particles, are flatulent. *Arbutnot*.

(2.) **PEASE**, in botany. See **PISUM**.

(1.) * **PEAT**. *n. f.* A species of turf used for fire.—Turf and *peat*, and cowheards are cheap fuels, and last long. *Bacon*.—Carew, in his survey of Cornwall, mentions nuts found in *peat*-earth two miles East of St Michael's mount. *Woodw.*

(2.) * **PEAT**. *n. f.* [from *petit*, Fr.] A little fondling; a darling; a dear play thing. It is now commonly called *pet*.—

A pretty *peat*!

Shak.

The wench a pretty *peat*.

Donne.

(3.) **PEAT**, (§ 1.) is a well known inflammable substance, used in many parts of the world as fuel. There are two species: viz. 1. A yellowish brown

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or

or black peat, found in moorish grounds in Scotland, Holland, and Germany. When fresh, it is of a viscid consistence, but hardens by exposure to the air. It consists, according to Kirwan, of clay mixed with calcareous earth and pyrites; sometimes also it contains common salt. While soft, it is formed into oblong pieces for fuel, after the pyritaceous and stony matters are separated. By distillation it yields water, acid, oil, and volatile alkali; the ashes containing a small proportion of fixed alkali; and being either white or red, according to the proportion of pyrites contained in the substance. The oil obtained from peat, has a very pungent taste; and an empyreumatic smell, less fetid than that of animal substances, more so than that of mineral bitumens: it congeals in the cold into a pitchy mass, which liquefies in a small heat; it readily catches fire from a candle, but burns less vehemently than other oils, and immediately goes out upon removing the external flame: it dissolves almost totally in rectified spirit of wine into a dark brownish red liquor. 2. The ad species is found near Newbury in Berkshire. In the *Philos. Transf.* for 1757, we have the following account of this species: Peat is a composition of the branches, twigs, leaves, and roots of trees, with grass, straw, plants, and weeds, which having lain long in water, is formed into a mass so soft as to be cut through with a sharp spade. The colour is a blackish brown, and it is used in many places for firing. There is a stratum of this peat on each side the Kennet, near Newbury in Berks, which is from about a quarter to half a mile wide, and many miles long. The depth below the surface of the ground, is from one foot to 8. Great numbers of entire trees are found lying irregularly in the true peat. They are chiefly oaks, alders, willows, and firs, and appear to have been torn up by the roots: many horses heads, and bones of several kinds of deer, the horns of the antelope, the heads and tusks of boars, and the heads of beavers, are also found in it. Not many years ago, an urn of a light brown colour, large enough to hold about a gallon, was found in the peat-pit in Speen moor, near Newbury, at about 10 feet from the river, and four feet below the level of the neighbouring ground. Just over the spot where the urn was found, an artificial hill was raised about 8 feet high; and as this hill consisted both of peat and earth, it is evident that the peat was older than the urn. From the sides of the river, several semicircular ridges are drawn round the hill, with trenches between them. The urn was broken to shivers by the peat-diggers who found it, so that it could not be critically examined. With peat also may be classed that substance called in England *stone-turf*; which hardens after its first exposure to the air, but afterwards crumbles down. The other common turf consists only of mould interwoven with the roots of vegetables; but when these roots are of the bulbous kind, or in large proportion, they form the worst kind of turf. "Although it may appear incredible (says M. Magellan,) it is nevertheless a real fact, that, in England, pit-turf is advantageously employed in Lancashire to smelt the iron ore of that county. Mr Wilkinson, brother-

in-law to Dr Priestley, makes use of pit-turf in his large smelting furnaces. I have seen in the possession of Mr S. More, secretary to the Society of Arts, a kind of black tallow, extracted by the said Mr Wilkinson from pit-turf. It was very soft, and nearly of the same consistence with butter. It burnt very rapidly, with a smoky flame, in the fire; but the smell was very disagreeable, like that of pit-turf." The great cause of the differences of peat most likely arises from the different mineral admixtures. Some sorts of peat yield, in burning, a very disagreeable smell, which extends to a great distance; whilst others are inoffensive. Some burn into grey or white, and others into red ferruginous ashes. The ashes yield, on elixation, a small quantity of alkaline salt, with sometimes one, and sometimes another salt of the neutral kind. The smoke of peats does not preserve or harden flesh like that of wood; and the soot into which it condenses is more disposed to liquify in moist weather.

(4.) PEAT ASHES, properly burnt for a manure, are noble improvers both of corn and grass land; but the substance from which they should be got, is an under stratum of the peat, where the fibres and roots of the earth, &c. are well decayed. Indeed the very best are procured from the lowest stratum of all. This will yield a large quantity of very strong ashes, in colour (when first burnt) like vermilion, and in taste very salt and pungent. Great care and caution should be used in burning these ashes, and also in preserving them afterwards. The method of burning them is much the same as burning charcoal. The peat must be collected into a large heap, and covered so as not to flame out, but suffered to consume slowly, till the whole substance is burnt to an ash. The ashes thus burnt are held in most esteem; but the peat-ashes burnt in common firing, are in many places used for the same purposes, and sold at the same prices. Peat-ashes are excellent in sweetening four meadow land, destroying rushes, and other bad kinds of grass, and in their stead producing great quantities of natural grass. They burn great quantities of peat-ashes in some parts of Berkshire and Lancashire, and esteem them one of the best dressings for their spring crops. The sulphureous and saline particles with which the ashes abound, have a most happy effect in promoting vegetation; and, if used with discretion, the increase procured by them is truly wonderful. All ashes are of a hot, fiery, caustic nature: they must therefore be used with caution. With respect to peat-ashes, almost the only danger proceeds from laying them on in too great quantities at improper seasons. Nothing can be better than they are for dressing low damp meadows, laying to the quantity of from 15 to 20 Winchester bushels on an acre: it is best to sow them by hand, as they will then be more regularly spread. This should be done in January or February at latest, that the ashes may be washed in towards the roots of the grass by the first rains that fall in spring. If they were spread more forward in the year, and a speedy rain should not succeed, being hot in their nature, they would be apt to burn up the grass, instead of doing it any service. The damper and siffer the soil, the more peat-

peat-ashes should be laid on it; but in grass lands the quantity should never exceed 30 Winchester bushels, and on light warm lands less than half that quantity is fully sufficient. On wheat crops, these ashes are of the greatest service, but they must be laid on with the utmost discretion. Were they to be spread in any quantity before winter, after the sowing the corn, they would make the wheat too rank, and do more harm than good; were the spreading this manure, on the contrary, deferred till spring, the corn could not possibly during the winter season, be benefited by it. The beginning of November, before the hard frosts set in, seems to be the proper season for this purpose: and it is necessary to sow on every acre of heavy clayey wheat land, about eight Winchester bushels of these ashes; on lighter warmer lands in wheat, four will be sufficient for this season. The winter dressing is thought by practical farmers to be of great service: trifling as the quantity may seem, it warms the root of the plants, brings it moderately forward, preserves its verdure, and disposes it to get into a growing state the first fine weather after Christmas. About the end of February, or the beginning of March, on heavy lands in wheat, another dressing of ashes, by sowing of them on every acre 8 bushels more, will do much good; on light lands, in this ad dressing, six bushels may be allowed. These ashes laid on in the spring are of the greatest service, without any probability of danger: if rain falls within a few days after the dressing is laid on, it is washed in, and has a happy effect on the succeeding crop, co-operating with the manure that was laid on in November; if, on the contrary, dry weather for a long continuance succeeds, the first winter dressing has its full effect, and the quantity laid on in the spring is in fact so small, that there is very little probability of its burning or hurting the crop. This excellent manure is also of great use in the turnip husbandry, particularly as it much contributes to preserve the young crop from being devoured by the fly. But one of the principal advantages derived from these ashes is the very great service they are of to every kind of artificial pasture. Saintfoin receives great benefit from this manure, and so does clover, rye-grass, and trefoil, provided it is laid on with discretion: the proper season is about February. The quantity must be regulated by the nature of the crop and soil; but it ought scarcely in any instance to exceed thirty Winchester bushels. Clover, with the help of this manure, grows with great luxuriance, inasmuch that there have often been two large crops of hay from the same field in a year, and good autumn feed afterwards. They have an excellent effect on tares or vetches: to pease they seem to be hurtful. The effects of this manure will be visible at least three years, nor does it leave the land in an impoverished state, when its virtues are exhausted and spent. Peat-ashes are not, however, so certain a manure for barley and oats as for winter corn: for as these are quick growers, and occupy the land but a few months, this warm manure is often apt to push them forward too fast, and make them run too much to coarse straw, yielding only a lean immature grain. Oats, however, are not so apt to be damaged by

it as barley. Peat-ashes approach, in their effects on the several crops on which they are laid, to coal foot; but two thirds of the quantity that is used of foot will be sufficient of the ashes, as they are in a much stronger degree impregnated with a vegetative power; and they are besides in most places easier procured in quantities, and at a cheaper rate. Peat ashes are almost a general manure suited to every soil. On cold clay they warm the two compact particles, dispose it to ferment, crumble, and of course fertilize, and, in fine, not only assist it in disclosing and diffusing its great vegetative powers, but also bring to its aid a considerable proportion of ready prepared aliment for plants. On light lands these ashes have a different effect: here the pores are too large to be affected, or farther separated by the salts or sulphur contained in them; but, being closely attached to the surfaces of the large particles of which this earth is generally composed, this manure disposes them, by means of its salts, to attract the moisture contained in the air: by this operation, the plants which grow on these porous soils are prevented from being scorched up and burnt; and if they want more nourishment than the land is capable of affording, this is readily and abundantly supplied by this useful manure. In large farms, it is very usual to see all the home fields rich and well mended by the yard dung, &c. whereas the more distant lands are generally poor, impoverished, and out of heart, for want of proper manure being applied in time.

(5.) PEAT LAW, in geography, a hill of Scotland, in Selkirkshire; 2 miles NW. of Selkirk. It is 1694 feet above the sea level.

PEATHS, PEAS, or PEASE, a vast chasm, or ravine of Scotland, in Berwickshire, in the parish of Cockburnspath, between Berwick and Dunbar, through which the rivulet PEAS, or PEAS-BURN, runs. An elegant bridge of 4 arches was built over it in 1786, supposed to be the highest in Britain, as it is 200 feet perpendicular above the old road, and 123 feet above the water. It is 300 feet long, and 15 feet wide; and the parapet walls are 6 feet high. *Stat. Acc. XIII, 230.*

PEATRA, a town of European Turkey, in Moldavia; 16 miles SSW. of Niemez.

PEAUCIER, in anatomy, a name given by Winslow, in his treatise on the Head, and by some of the French writers, to the muscle called by Albinus *latissimus colli*; and by others *detrahens quadratus*, and *quadratus genæ*. Santorini has called the part of this which arises from the check *musculus risorius novus*; and some call the whole *platysma myoides*.

PEAULE, a town of France, in the department of Morbihan; 7 miles S. of Rochefort, and 4½ NW. of Roche Bernard.

(1.) * PEBBLE. PEBBLESTONE. *n. s.* [*pæbolstana*, Saxon.] A stone distinct from flints, being not in layers, but in one homogeneous mass, though sometimes of many colours. Popularly a small stone.—The purling noise it made upon the pebble-stones it ran over. *Sidney*.—

The bishop and the duke of Glo'ter's men,
Have fill'd their pockets full of pebblestones.

Shak.
—Suddenly

—Suddenly a file of boys delivered such a shower of *pebbles* loose shoot, that I was fain to draw mine honour in. *Shak.*—You may see *pebbles* gathered together, and a crust of cement between them, as hard as the *pebbles*. *Bacon.*—

As children gath'ring *pebbles* on the shore.

Milton.

Fountains o'er the *pebbles* chid your stay.

Dryden.

—Another body, that hath only the resemblance of an ordinary *pebble*, shall yield a metallic and valuable matter. *Woodow.*

(1.) **PEBBLES**, in mineralogy, are a genus of fossils, distinguished from the flints and homocroa by their having a variety of colours. These are defined to be stones composed of a crystalline matter debased by earths of various kinds in the same species, and then subject to veins, clouds, and other variegations, usually formed by incrustation round a central nucleus, but sometimes the effect of a simple concretion; and veined like the agates, by the disposition which the motion of the fluid they were formed in gave their differently coloured substances. The variety of pebbles is so great, that an hasty describer would be apt to make almost as many species as he saw specimens. A careful examination will teach us, however, to distinguish them into a certain number of essentially different species, to which all the rest may be referred as accidental varieties. When we find the same colours, or those resulting from a mixture of the same, such as nature frequently makes in a number of stones, we shall easily find that these are all of the same species, though of different appearances; and that whether the matter be disposed in one or two, or 20 crusts, laid regularly round a nucleus; or thrown irregularly, without a nucleus, into irregular lines; or lastly, if blended into an uniform mass. These are the three states in which every pebble is found; for if it has been naturally and regularly formed by incrustation round a certain nucleus, we find that always the same in the same species, and the crusts not less regular and certain. If the whole has been more hastily formed, and the result only of one simple concretion, if that has happened while its different substances were all moist and thin, they have blended together, and made a mixed mass of the joint colour of them all. But if they have been something harder when this has happened, and too far concreted to diffuse wholly among one another, they are found thrown together into irregular veins. These are the natural differences of all the pebbles; and having regard to these in the several variegations, all the known pebbles may be reduced to 34 species. In all the strata of pebbles, there are constantly found some which are broken, and of which the pieces lie very near one another; but as bodies of such hardness could not be broken without some considerable violence, their present situation seems to indicate that they have suffered that great violence in or near the places where they now lie. Besides these, we often meet with others which have as plainly had pieces broken off from them, though those pieces are nowhere to be found; whence it seems equally plain, that whatever has been the cause of their fracture,

they have been brought broken, as we find them, from some other place, or else that the pieces broken from them must at some time or other have been carried from this place to some other distant one. Several of these broken pebbles have their edges and corners so sharp and even, that it seems evident they never can have been tossed about or removed since the fracture was made; and others have their sides and corners so rounded, blunted, and worn away, that they seem to have been roughly moved and rolled about among other hard bodies, either with great violence, or for a very long continuance; since such hard bodies could not have been reduced to the condition in which we now see them without long friction. It may be supposed by some, that these stones never were broken, but have been naturally formed of this shape; but it will be easily seen, by any one who accurately surveys their veins or coats, which surrounded the nucleus, like the annual circles of a tree, that they must have been originally entire; and this will be the more plain, if they are compared with a stone broken by art. Such pebbles as are found in strata, near the surface of the earth, are much more brittle than those which lie in deeper strata; and the more clear and transparent the sand is which is round among pebbles, the more beautiful the pebbles are generally observed to be. The use of these stones, and their disposition in the earth, are subjects worthy of investigation. The surface of the earth is composed of vegetable mould, made up of different earths mixed with the putrid remains of animal and vegetable bodies, and of the proper texture and compages for conducting the moisture to the roots of trees and plants. Under this are laid the sands and pebbles which serve as a sort of drain to carry off the redundant moisture deeper into the earth, where it may be ready to supply the place of what is constantly rising in exhalations; and lest the strata of sand should be too thick, it is common to find thin ones of clay between, which serve to put a stop to the descent of the moisture, and keep it from passing off too soon; and lest these thin strata of clay should yield and give way, and by their softness when wetted give leave to the particles of sand to blend themselves with, and even force their way through them, there are found in many places thin coats of a poor iron ore, placed regularly above and below the clay; and by these means not only strengthening and supporting the clay, but effectually keeping the sand from making its way into it. Such is the substance of the distinctions, arrangements, and remarks, of former mineralogists on this genus of fossils. But in the new and accurate system of mineralogy drawn up by Dr Thomson, instead of forming a *genus*, consisting of 34 species, pebbles only form 2 or 3 varieties, arranged under the species *Chalcedony* and *Jasper*. See MINERALOGY, Part II, Chap. IV, Class 1, Ord. I. Gen. VI. Sp. 7. var. 2. and Sp. 8. var. 2.

(3.) **PEBBLES**, EGYPTIAN. See MINERALOGY, *Ibid.*

(4.) **PEBBLES**, MEDICAL ABUSE OF. There are many of opinion, that the swallowing of pebbles is beneficial to health, in helping the stomach to digest its food. But the stomach of man is formed

formed so, that it can never require those assistances to the comminution of food. On the contrary, it must be hurt by such extraneous and indigestible substances as pebbles; and there are instances on record in which they have undoubtedly done much mischief.

(5.) **PEBBLES**, SCOTTISH. See MINERALOGY, 23 above.

* **PEBBLE CRYSTAL**, *n. f.* This sort, called by the lapidaries *pebble-crystal*, is in shape irregular. *Woodward.*

* **PEBBLED**, *adj.* [from *pebble*.] Sprinkled or abounding with pebbles—

This bank fair spreading in a *pebbled* shore. *Thomson.*

PEBBLE-STONE. See **PEBBLE**, § 1.

* **PEBBLY**, *adj.* [from *pebble*.] Full of pebbles. The *pebbly* gravel next. *Thomson.*

PEC, a town of France, in the department of Paris; 5 miles W. of Paris.

PECAQUE, *sr.*, a town of Mexico, in Xalisco.

PECARY, in zoology. See **SUS**, N° 4.

* **PECCABILITY**, *n. f.* [from *peccable*.] State of being subject to sin.—The common *peccability* of mankind is urged to induce commiseration towards the offenders. *Decay of Piety.*

* **PECCABLE**, *adj.* [from *pecco*, Latin.] Liable to sin.

* **PECCADILLO**, *n. f.* [Span. *peccadillo*, Fr.] A petty fault; a slight crime; a venial offence.—Those little vices, which we call follies and the defects of the human understanding, or at most the *peccadillos* of life. *Dryden.*—'Tis low ebb with his accusers, when such *peccadillos* as these are put in to swell the charge. *Atterbury.*

PECCAIS, a town of France, in the dep. of Gard, with salt-works near it; 3 miles SE. of Aigues Mortes.

* **PECCANCY**, *n. f.* [from *peccant*.] Bad quality.—The disease took its original merely from the disaffection of the part, and not from the *peccancy* of the humours. *Wifeman.*

(1.) * **PECCANT**, *adj.* [peccant, Fr. *peccans*, Lat.] 1. Guilty; criminal.—

My judgments, how with mankind I proceed;
As how with *peccant* angels late they saw. *Milt.*
—Such a *peccant* creature should disapprove and repent of every violation of the rules of just and honesty. *South.* 2. Ill disposed; corrupt; bad; offensive to the body; injurious to health. It is chiefly used in medical writers.—

Purge the *peccant* humours that abound. *Dryd.*
—Such as have the bile *peccant* or deficient are relieved by bitters. *Arbut.* 3. Wrong; bad; deficient; informal.—Nor is the party cited bound to appear, if the citation be *peccant* in form or matter. *Ayliffe.*

(2.) **PECCANT**, in medicine, an epithet given to the humours of the body, when they offend either in quantity or quality, *i. e.* when they are either morbid, or in too great abundance. Most diseases arise from *peccant* humours, which are either to be corrected by alteratives and specifics, or else to be evacuated. But this is disputed by the advocates for the New System of Medicine.

PECETO, a town of France, in the dep. of the Po, and late province of Chieri, in the Piedmontese; 3 miles SW. of Chieri.

PECHANTRE, Nicholas, a French poet, the son of a surgeon at Toulouse, where he was born in 1638. He wrote poems in Latin and French, for which he was thrice crowned by the Academy *des Jeux Floraux*. He also wrote a tragedy entitled *Geta*, which was acted at Paris in 1687, with great applause. He died in 1708.

PECHLENDE, *n. f.* the black ore of Uranium. See MINERALOGY, Part II, Chap. VII, Class IV, Order XIX, Gen. I, Sp. 1: and Part III, Cl. IV, § XIX.

PECHEM, in the materia medica, a name given by the modern Greek writers to the root called *behem* by Avicenna and Serapion. Many have been at a loss to know what this root *pechem* was; but the virtues ascribed to it are the same with those of the *behem* of the Arabians; its description is the same, and the division of it into white and red is also the same. The word *pechem* is formed of *behem* by changing the *b* into a *p*, and the aspirate into *ch* or *ch*, which are both common. Myrepsus, who treats of this root, says the same thing that the Arabian Avicenna says of *behem*, namely, that it was the fragments of a woody root much corrugated and wrinkled on the surface, owing to its being so moist whilst fresh, that it always shrunk greatly in the drying.

PECHER. See **PAKIR**.

PECHIA, a town of European Turkey, in Servia, on the Drino, 35 miles NE. of Ragusa, and 112 WSW. of Nissa.

PECHMEJA, John, a learned French writer, born at Villa Franca. His Eulogy on the great Colbert received the approbation of the French Academy in 1773. He died in 1785.

PE-CHOU, a town of China, in Chen-si.

PECHYAGRA, a name given by authors to the gout affecting the elbow.

PECHYS, a name used by some anatomical writers for the elbow.

PECHYTYRBE, an epithet used by some medical writers for the scurvy.

(1.) **PECK**, Francis, was born at Stamford, in Lincolnshire, May 4, 1693, and educated at Cambridge where he took the degrees of B. and M. A. He was appointed rector of Godeby, near Melton in Leicestershire. He was the author of many works; viz. 1. A poem, entitled *Sighs on the Death of queen Anne*; 1714. 2. TO TWOE'ATION; or an Exercise on the Creation, and an Hymn to the Creator of the World; written in the words of the text, to show the Beauty and the Sublimity of the Holy Scriptures, 1716, 8vo." 3. In 1721, being then curate of King's Clifton in Northamptonshire, he issued proposals for printing the History and Antiquities of his native town, which was published in 1727, in folio, under the title of "*Academia tertia Anglicana*; or the Antiquarian Annals of Stamford in Lincoln, Rutland, and Northampton shires; containing the History of the University, Monasteries, Guilds, Churches, Chapels, Hospitals, and Schools there, &c. inscribed to John Duke of Rutland. 4. The History of the Stamford bull-running. 5. "Queries concerning the Natural History and Antiquities of Leicestershire and Rutland," in 1729 and 1730; but the work, though his progress in it was very considerable, never made its appearance. 6. In 1732, he published

published vol. 1. of "*Defiderata Curioſa*;" or, a Collection of Divers ſearce and curious Pieces relating chiefly to Matters of English Hiſtory; conſiſting of choice tracts, memoirs, letters, &c. tranſcribed, many of them, from the originals, and the reſt from divers ancient MS. copies, or the MS. collations of fundry famous antiquaries, &c. with notes, contents, and a complete index. This vol. was dedicated to Lord William Manners, and was followed, in 1735, by a 2d vol. dedicated to Dr Reynolds Bp. of Lincoln. 7. A complete catalogue of all the diſcourſes written both for and againſt popery in the time of K. James II. containing an account of 457 books and pamphlets: &c. 4to, 1735. 8. Nineteen Letters of the rev. Henry Hammond, D. D. to Mr Peter Stainnough and Dr Nathaniel Angelo, on curious ſubjects, &c. 1739. 9. Memoirs of the Life and Actions of Oliver Cromwell, as delivered in three panegyrics of him written in Latin; ſuppoſed by Mr John Milton; with an English verſion; illuſtrated with a large hiſtorical preface and notes, &c. 1740, 4to. 10. New Memoirs of the Life and poetical Works of Mr John Milton; with 1. An examination of Milton's ſtyle; 2. Explanatory and critical notes on Milton and Shakeſpeare. 3. Baptiſtes; a ſacred dramatic poem in defence of liberty, written in Latin by George Buchanan, tranſlated by Mr John Milton, and firſt published in 1641. by order of the houſe of commons. 4. The Parallel, or Abp. Laud and Card. Wolſey compared, a Viſion by Milton. 5. The Legend of Sir Nicholas Throckmorton, knt. chief butler of England, who died of poiſon, anno 1570, an hiſtorical poem, by his nephew Sir Thomas Throckmorton, knt. 6. Herod the great, by the editor. 7. The Reſurrection a poem in imitation of Milton. 8. A Diſcourſe on the Harmony of the Spheres, by Milton; with prefaces and notes, 1740, 4to. He died Aug. 13th 1743, aged 61.

(2.) * PECK. *n. ſ.* [from *pocca*, or perhaps from *fat*, a veſſel. *Skinner*.] 1. The fourth part of a buſhel.—

Burn our veſſels, like a new
Seal'd peck or buſhel, for being true. *Hudibras*.
—To every hill of aſhes, ſome put a peck of unſlack'd lime. *Mort. Huſb*.—

He drove about his turnips in a cart;
And from the ſame machine fold pecks of peaſe. *King*.

2. Proverbially. [In low language.] A great deal.
Her finger was ſo ſmall, the ring
Would not ſtay on which they did bring;
It was too wide a peck. *Suckling*.

* To PECK. *v. a.* [*becquer*, Fr. *picken*, Dutch.]
1. To ſtrike with the beak as a bird. 2. To pick up food with the beak.—

She, when he wai'd, went pecking by his ſide. *Dryden*.
—Can any thing be more ſurpriſing, that to conſider Cicero obſerving, with a religious attention, after what manner the chickens pecked the grains of corn thrown to them? *Addiſon*. 3. To ſtrike with any pointed inſtrument.—With a pick-ax of iron about 16 inches long, ſharpned at the one end to peck, and flat-headed at the other. *Corew's Survey*. 4. To ſtrike; to make blows.—Two contrary factions, both inveterate enemies of our

church, which they are perpetually pecking and ſtriking at with the ſame malice. *South*.—Mankind lie pecking at one another, till they are torn to pieces. *L'Eſtrange*. 5. The following paſſage is perhaps more properly written to pick, to throw :

Get up o' th' rail, I'll peck you o'er the pales
eſe. *Shak*.

PECKELSHEIM, a town of Germany, in Paderborn; 15 miles SE. of Paderborn.

* PECKER. *n. ſ.* [from *peck*.] 1. One that pecks. 2. A kind of bird: as the wood-pecker.—The titmouse and the peckers hungry brood. *Dryd*.

(1.) PECKHAM, a town of Surry, in the pariſh of Camberwell; between Camberwell and Deptford; which has a noted fair on the 1ſt Auguſt.

(2.) PECKHAM, EAST, or GREAT; } 2 towns
(3.) PECKHAM, WEST, or LITTLE; } of Kent,
near W. Malling.

* PECKLED. *adj.* [corrupted from *ſpeckled*.] Spotted; varied with ſpots.—Some are peckled, ſome greeniſh. *Walt. Angler*.

PECKWELL, Henry, D. D. a diviſe of the church of England, born in 1747. He was chaplain to the marchioneſs of Lothian, and rector of Bloxham in Lincolnſhire; but attached himſelf to the Calviniſtic or Whitefield's methodiſts, among whom he was very popular. He patroniſed the Humane Society, and the Society for relief of perſons impriſoned for ſmall debts. He ſtudied phyſic, and founded a Society for viſiting the ſick at their own houſes; but ſell a ſacrifice to his philanthropy, by wounding himſelf in the hand, while opening the body of a patient who had died of a putrid fever. The part mortified, and he died Aug. 18, 1787. He printed ſeveral ſermons.

PECORA, in zoology, the fifth order of the claſs mammalia, in the Linnean ſyſtem. See ZOOLOGY.

PEQUENCOURT, a town of France, in the dep. of the North, and ci-devant prov. of Hainault, on the Scarpe; 5 miles E. of Douay. Lon. 3. 16. E. Lat. 50. 23. N.

(1.) PEQUET, Anthony, a celebrated French philoſopher, born in 1704. He was appointed grand maſter of the water-works and forests of Rouen. His writings on philoſophy, politics, and morals are numerous. His *Spirit of Laws* and of *Political Maxims* and his *Thoughts on Man* are moſt eſteemed. He died in 1762.

(2.) PECQUET, John, a celebrated phyſician born in Dieppe. He was phyſician in ordinary to the celebrated Fouquet, whom he entertained with experiments in natural philoſophy. He acquired immortal honour by the diſcovery of a lacteal vein, which conveys the chyle to the heart; and which from him is called the *Reſervoir de Pecquet*. This diſcovery was a freſh proof of the truth of the circulation of the blood; though it was oppoſed by many of the learned, particularly the famous Riolan, who wrote a treatiſe againſt the author of it, with this title: *Adverſus Pecquetum et Pecquetianos*. Pecquet's works are, 1. *Experimenta nova Anatomica*; Paris, 1654. 2. A Diſſertation, *De Thoracis Laſſe*; Amſterdam, 1661. He was a man of a lively and active genius. He recommended, as a remedy for all diſeaſes, the uſe of brandy. This remedy, however, contributed to ſhorten his own days. He died at Paris, in 1674.

PECTEN,

PECTEN, the **SCALLOP**, a genus of shell-fish. The characters are these: The animal is a tethys; the shell bivalve and unequal; the hinge toothless, having a small ovated hollow. This shell-fish is one of the spinners, having the power of spinning threads like the muscles; but they are much shorter and coarser than those of that fish, so that they can never be wrought into any kind of work like the longer and finer threads of the pinna marina. The use of the threads which are spun upon the scallop is to fix the creature to any solid body near its shell. All these proceed, as in the muscle, from one common trunk. It is an evident proof, that the fish has a power of fixing itself at pleasure to any solid body by means of these threads, that after storms the scallops are often found tossed upon rocks where there were none the day before; and yet these are fixed by their threads, as well as those which had remained ever so long in their place. They form their threads in the same manner with the muscle; only their organ for spinning is shorter, and has a wider hollow, whence the threads are necessarily thicker and shorter. (See **MYTILUS**, N^o 4.) Mr Barbut divides the genus **OSTREA** into 4 families; which he thus names, according to their characters: 1. The winged equilateral pectens; 2. The pectens that have one ear inwardly, springing by being ciliated; 3. The pectens that have their valves more gibbous on one side than on the other; 4. The rough ones, commonly called **OYSTERS**. Of the locomotive powers of the pecten, we have already treated under the article **ANIMAL MOTION**. See **MOTION**, § 2.—The pectens, such as the sole pecten, the *ducal mantle pecten*, the *knotted*, and others, seem to be in general inhabitants of the Indian seas; some of them frequent those of Africa and the South Seas. The name *pecten* seems to have been given to these animals, from the longitudinal frize with which their surface is covered, which resemble somewhat the teeth of a comb; and hence also the Greek name *πτερον*. By the general character of this shell, it evidently includes cockles as well as scallops, which are the pectens without ears, and having less flat or elated shells. Cockles are called by all authors by a name which is only a diminutive of *pecten*, **PECTUNCULUS**. The having ears indeed is the common mark of distinction between the pectens and the cockles, which last usually have none; yet the genera are not distinct, as some have imagined; for there are shells universally allowed to be pectens or scallops which have no ears, and others as universally allowed to be pectuncles or cockles which have. Hence then appears the error of Lister, who made them two distinct genera, and gave the ears and the equal convexity of both shells as the great characteristics of them; which, though they be good marks to distinguish the species by, are far from being so unalterable as to found different genera upon. Barbut ranks the pectens under the genus *ostrea*; but he says, that though the generic character of the hinge agrees in both, the animal inhabiting the pectens is very different from that of the oyster; for which reason Linnaeus has divided the genus into sections. The pectens by some are esteemed as delicious a food as the oyster. They differ very materially in a variety of circumstances. The

pectens sail on the surface of the water; and besides, if they are attacked by a foe, they let down the membrane which nature has provided them for a sail, and drop to the bottom. "Behold (says Barbut) the splendour of the pectines, which rival the glowing colours of the papilionaceous tribe, as numerous as they are beautiful, flitting from place to place, and may well be called the papiliones of the ocean. What superior qualities does not the pecten enjoy above the *OSTREA EDULIS*, which, constantly confined to its native bed, seems wholly destined to afford food to other creatures, not having any means of defence but its shelly castle, which is often attacked and stormed by its numerous enemies? This creature is not only useful to man as a dainty food, but the shell, being levigated into a subtil powder, is employed as an absorbent in heart-burns and other like complaints arising from acidities in the first passages; the hollow shells are generally made choice of, as containing more than the thinner flat ones, of the fine white earth, in proportion to the outer rough coat, which last is found to be considerably impregnated with sea-salt." The grand mark of distinction between the pectens and oyster seems to be the locomotive faculty. It was long supposed that the oyster possessed no power of motion, that it always remained in the place in which nature or accident had placed it, and that its life differed little from that of vegetables. Experience, however, has taught us to reject these premature conclusions. What Abbe Dicquemare has observed with respect to this circumstance is worth quoting. (See **MOTION**, § 2.) "Passing one day (says he) along the sea-shore, I observed an oyster lying in a shallow place, and ejecting with considerable force a quantity of water. It immediately occurred to me, that, if this happened at a sufficient depth, the resistance of the water would have forced the oyster from its place. To be satisfied of this, I took several middle-sized oysters with a light shell, and placed them on a smooth horizontal surface, in a sufficient quantity of pure sea-water. Some hours elapsed, and the night came on before any thing remarkable appeared; but next day I found one of the oysters in a place and situation different from that in which I had left it; and as nothing could have decomposed it, I could not doubt but that it had moved by its own powers. I continued, however, to attend my charge; but, as if they meant to conceal their secret, the oysters always operated in my absence. At last, as I was exploring the coast of Lower Normandy, I perceived in an oyster-bed one of them changing place pretty quickly. On my return, therefore, to Havre, I made new dispositions to discover the means by which the motions of oysters are performed, and I succeeded. This animal ejects the water by that part of the shell which is diametrically opposite to the hinge; it can also throw it out at the sides, at each extremity of the hinge, or even from the whole opening at once. For this purpose it can vary the action of its internal mechanism; but the soft parts are not the only organs that perform this function; in certain cases the shells assist in forcing out the water. When an oyster thus suddenly, forcibly, and repeatedly squirts forth a quantity of water, it repulses those

of its enemies that endeavour to innuendate themselves within the shells while they are open: but this is effectual only against its weakest foes; for there are some so formidable by their strength or their address, that a great number of oysters perish in this way. The animal, therefore, endeavours with all its force to repel them: it does more, it retreats backwards, or starts aside in a lateral direction. All of them, however, are not placed in circumstances favourable for these motions. They are often situated in the crevices of rocks, between stones, or among other oysters, some in sand, and some in mud; so that their strength, or powers of motion, are exerted in vain. It is probable, however, that they have the faculty of operating their own relief from these circumstances, and that they may be accidentally assisted by other bodies. It must, however, be acknowledged, that the means of relief cannot be numerous or considerable in such as are attached to other oysters, to a body heavier than themselves, or to a rock; but such situations are the most uncommon in the oyster-beds that I am acquainted with: on the French coasts in the Channel. Perhaps, indeed, a very angular or heavy shell may be sufficient to render an oyster immovable. This is undoubtedly the case with such of them as have been obliged by worms, or other more formidable enemies, so to increase their shells as to make them thick and unyielding. An oyster that has never been attached may fix itself by any part of the margin of either of its valves, and that margin will become the middle, or nearly so, if the oyster is young. I have seen them operate upon their shells in so many different ways, and with such admirable contrivance, when these shells have been pierced by their enemies (among whom I must be ranked), that I do not think it at all impossible for them to quit the place to which they are attached. It will easily be imagined how delicate and difficult such observations and experiments must be, considering the sensibility of the animal, the delicacy of its organs, the transparency of the matter that forms the layers of its shells, the opacity of the shells themselves, the vicissitudes of the sea, and the seasons, &c. But it was of use to show, that, contrary to the opinion generally entertained by the learned, as well as by fishermen, oysters are endowed with a locomotive faculty, and by what means that faculty is exerted. Those which first showed me these motions were brought from the coasts of Bretagne, put into a bed at La Hague, then at Concarneau, whence they were carried to Havre; and as all these transportations were made in a dry carriage, the oysters could not be in perfect vigour. These animals have much more sensation and more industry than is generally attributed to them. Those authors are not so enlightened as they imagine, who represent the oyster as an animal deprived of sensation, as an intermediate being between animals and vegetables, as a plant, and even in some respects as inferior to a plant. It is thus that the oyster has been made a foundation for many an absurd hypothesis with respect to the nature of animals. The oyster is conscious of its existence, and conscious also that something exists exterior to itself. It chooses, it rejects; it varies its operations with judgment, according to

circumstances; it defends itself by means adequate and complicated; it repairs its losses; and it can be made to change its habits. Oysters newly taken from places which the sea had never left, inconsiderately open their shells, lose the water they contain, and die in a few days: but those that have been taken from the same place, and thrown into beds or reservoirs from which the sea occasionally retires, where they are incommoded by the rays of the sun, or by the cold, or where they are exposed to the injuries of man, learn to keep themselves close when they are abandoned by the water, and live a much longer time." See OSTRÆA. The most remarkable species is the

PECTEN MAXIMUS, or great scallop, being the same with what Barbut calls the *ducal-mantle pecten*. It has 12 rays, very prominent and broad, and striated both above and below. They are rugged and imbricated with scales. They grow to a large size, and are found in beds by themselves; are dredged up, and harrelled for sale. The ancients say that they have a power of removing themselves from place to place by vast springs or leaps. The shell was used both by the Greeks and Latins as a food. When dressed with pepper and cummin, it was taken medicinally. The scallop was commonly worn by pilgrims on their hat, or the cape of their coat, as a mark that they had crossed the sea in their way to the Holy Land, or some distant object of devotion.

* PECTINAL. *n. f.* [from *pecten*, Lat. a comb.] — Plain and cartilaginous fishes, as *pedinals*, or such as have their bones made laterally like a comb. *Brown*.

* PECTINATED. *adj.* [from *pecten*.] Standing from each other like the teeth of a comb.—To fit cross-legg'd, or with our fingers *pectinated*, is accounted bad. *Brown's Vulgar Errors*.

* PECTINATION. *n. f.* The state of being pectinated.—The complication or *pectination* of the fingers was an hieroglyphic of impediment. *Brown's Vulgar Errors*.

PECTIS, in botany, a genus of the polygamia superflua order, belonging to the syngeneia class of plants; and in the natural method ranking in the 49th order, *Compositæ*.

(1.) * PECTORAL. *adj.* [from *pectoralis*, Lat.] Belonging to the breast.—Being troubled with a cough, *pectorals* were prescribed. *Wise-man*.

(2.) * PECTORAL. *n. f.* [*pectorale*, Lat. *pectoral*, Fr.] A breast-plate.

(3.) PECTORAL, a sacerdotal vestment, worn by the Jewish high-priest. The Jews call it *Hoshphen*, the Greeks *ἀσπς*, the Latins *rationale* and *pectoral*; and in our version of the Bible it is called *breast-plate*. It was about a span square. See BREAST-PLATE, and Plate XLVI. fig. 8.

(4.) PECTORAL, an epithet for medicines good in diseases of the breast and lungs.

PECTORALE, a breastplate of thin brass, about 12 fingers square, worn by the poorer soldiers in the Roman army, who were rated under 1000 drachmæ. See LORICA.

PECTORALIS. See ANATOMY, § 207.

PECTUNCULUS, the cockle. See PECTEN.

(1.) * PECULATE. } *n. f.* [*peculatus*, Latin;

(1.) * PECULATION. } *peculet*, Fr.] Robbery of the publick; theft of publick money.

(2.) PECULATION,

(A.) **PECULATION**, or **PECULATE**, in civil law, the crime of embezzling the public money, by a person intrusted with the receipt, management, or custody thereof. This term is also used by civilians for a theft, whether the thing be public, fiscal, sacred, or religious.

* **PECULATOR**. [*peculator*, Latin.] Robber of the publick.

(1.) * **PECULIAR**. *adj.* [*peculiaris*, from *peculum*, Lat. *pecule*, Fr.] 1. Appropriate; belonging to any one with exclusion of others.—I agree with Sir William Temple, that the word humour is *peculiar* to our English tongue; but not that the thing itself is *peculiar* to the English, because the contrary may be found in many Spanish, Italian, and French productions. *Swift*. 2. Not common to other things.—The only sacred hymns they are that christianity hath *peculiar* unto itself. *Hooker*.—

One *peculiar* nation to select

From all the rest.

Milton.

—Space and duration being ideas that have something very abstruse and *peculiar* in their nature, the comparing them one with another may be of use for their illustration. *Locke*. 3. Particular; single. To join *most* with *peculiar*, though found in *Dryden*, is improper.—

I neither fear, nor will provoke the war;

My fate is Juno's most *peculiar* care. *Dryden*.

(2.) * **PECULIAR**. *n. f.* 1. The property; the exclusive property.—

By tincture or reflection, they augment

Their small *peculiar*. *Milton's Par. Lost*.

—Revenge is so absolutely the *peculiar* of Heaven, that no consideration whatever can empower even the best men to assume the execution of it. *South*. 2. Something abscinded from the ordinary jurisdiction.—Certain *peculiar*s there are, some appertaining to the dignities of the cathedral church at Exon. *Carew*.—Some *peculiar*s exempt from the jurisdiction of the bishops. *Lefley*.

(3.) **PECULIAR**, in the canon law, (§ 2. *def.* 2.) signifies a particular parish or church that has jurisdiction within itself for granting probates of wills and administrations, exempt from the ordinary or bishop's court. The king's chapel is a royal *peculiar*, exempt from all spiritual jurisdiction, and reserved to the visitation and immediate government of the king himself. There is likewise the archbishop's *peculiar*: for it is an ancient privilege of the see of Canterbury, that wherever any manors or advowsons belong to it, they forthwith become exempt from the ordinary, and are reputed *peculiar*s: there are 57 such *peculiar*s in the see of Canterbury. Besides these, there are some *peculiar*s belonging to deans, chapters, and prebendaries, which are only exempted from the jurisdiction of the archdeacon: these are derived from the bishop, who may visit them, and to whom there lies an appeal.

(4.) **PECULIARS, COURT OF**, is a branch of, and annexed to, the court of ARCHES. It has a jurisdiction over all those parishes dispersed though the province of Canterbury in the midst of other dioceses, which are exempt from the ordinary's jurisdiction, and subject to the metropolitan only. All ecclesiastical causes, arising within these *peculiar* or exempt jurisdictions, are originally cognizable by this court: from which an appeal lay for-

merly to the Pope, but now by the stat. 25 H. VIII. c. 19. to the king in chancery.

* **PECULIARITY**. *n. f.* [from *peculiar*.] Particularity; something found only in one.—If an author possessed any distinguished marks of style or *peculiarity* of thinking, there would remain in his least successful writings some few tokens whereby to discover him. *Swift*.

* **PECULIARLY**. *adv.* [from *peculiar*.] 1. Particularly; singly.—That is *peculiarly* the effect of the sun's variation. *Woodward*. 2. In a manner not common to others.—Thus Tivy boasts this beast *peculiarly* her own. *Drayton*.—When this danger increased, he then thought fit to pray *peculiarly* for him. *Fell*.

(1.) **PECULIUM**, in law, the stock or estate which a person, in the power of another, whether male or female, either as his or her slave, may acquire by his industry. Roman slaves frequently amassed considerable sums in this way. The word properly signifies the advanced price which a slave could get for his master's cattle, &c. above the price fixed upon them by his master, which was the slave's own property.

(2.) **PECULIUM**, in the Romish church, denotes the goods which each religious reserves and possesses to himself.

* **PECUNIARY**. *adj.* [*pecuniarius*, from *pecunia*, Latin, *pecuniaire*, Fr.] 1. Relating to money.—Their impostures delude not only unto *pecuniary* defrauds, but the irreparable deceit of death. *Brown*. 2. Consisting of money.—Pain of infamy is a severer punishment upon ingenuous natures than a *pecuniary* mulct. *Bacon*.—The injured person might take a *pecuniary* mulct by way of atonement. *Broom*.

* **PED**. *n. f.* [commonly pronounced *pad*.] 1. A small packfaddle. A *ped* is much shorter than a pannel: and is raised before and behind, and serves for small burdens.—

A pannel and wanty, packfaddle and *ped*. *Tuff*. 2. A basket; a hamper.—A hask is a wicker *ped*, wherein they use to carry fish. *Spenser*.

PEDACE, a town of Naples, in Calabria Citra; 5½ miles S. of Cosenza.

* **PEDAGOGICAL**. *adj.* [from *pedagogue*.] Suited or belonging to a schoolmaster.

(1.) * **PEDAGOGUE**. *n. f.* [*pedagogus*, Latin, *παιδαγωγός*, *paie* and *agw*.] One who teaches boys; a schoolmaster; a pedant.—

Few *pedagogues* but curse the barren chair,
Like him who hang'd himself. *Dryden*.

(2.) A **PEDAGOGUE**, or **PÆDAGOGUE**, is an instructor in grammar and other arts. The word is formed from the Greek *παιδαγωγός*, *puerorum duktor*, i. e. a leader of boys. M. Fleury observes, that the Greeks gave this name to slaves appointed to attend their children, lead them, and teach them to walk, &c. The Romans gave the same denomination to the slaves who were intrusted with the care and instruction of their children.

* To **PEDAGOGUE**. *v. a.* [*παιδαγωγία*, from the noun.] To teach with superciliousness.—

This may confine their younger stiles,
Whom Dryden *pedagogues* at Will's. *Prior*.

* **PEDAGOGY**. *n. f.* [*παιδαγωγία*.] Preparatory discipline.—The old sabbath appertained to the *pedagogy* and rudiments of the law. *White*.—

In time the reason of men ripening to such a pitch, as to be above the *pedagogy* of Moses's rod and the discipline of types, God thought fit to display the substance without the shadow. *South*.

(1.) * **PEDAL.** *n. f.* [*pedalis*, Lat.] Belonging to a foot. *Diſt.*

(2.) * **PEDALS.** *n. f.* [*pedalis*, Lat. *pedales*, Fr.] The large pipes of an organ: so called because played upon and stopt with the foot. *Diſt.*

(3.) **PEDALS** are made square, and of wood; they are usually 13 in number. They are of modern invention, and serve to carry the sounds of an octave deeper than the rest. See **ORGAN**.

PEDALIUM, in botany, a genus of the angiospermia order, belonging to the didynamia class of plants; and, in the natural method, ranking under the 28th order, *Luride*.

* **PEDANEUS.** *adj.* [*pedaneus*, Latin.] Going on foot. *Diſt.*

(1.) * **PEDANT.** *n. f.* [*pedant*, French.] 1. A schoolmaster.—

A *pedant* that keeps a school i' the 'church.

Shak.

The boy who scarce has paid his entrance down

To his proud *pedant*, or declin'd a noun. *Dryd.*

2. A man vain of low knowledge; a man awkwardly ostentatious of his literature.—The *pedant* can bear nothing but in favour of the conceits he is amorous of. *Glanville*.—The preface has so much of the *pedant*, and so little of the conversation of men in it, that I shall pass it over. *Addison*.—

In learning let a nymph delight;

The *pedant* gets a mistress by't. *Prior*.

Pursuit of fame with *pedants* fills our schools.

Young.

(2.) **PEDANT**, is also used for a rough, unpolished man of letters, who makes an impertinent use of the sciences, and abounds in unseasonable criticisms and observations. *Madam Dacier* defines a *pedant*, a person who has more reading than good sense. See **PEDANTRY**. *Pedants* are ever armed with quibbles and syllogisms, breathe nothing but disputation and chicanery, and pursue a proposition to the last limits of logic. *Malebranche* describes a *pedant* as a man full of false erudition, who makes a parade of his knowledge, and is ever quoting some Greek or Latin author, or hunting back to a remote etymology. *Lord Chesterfield* justly and successfully ridiculed this species of *pedantry*, but set the example which has been since very much followed, of what may be styled *modern pedantry*, by constantly interlarding his letters and other works with French, Spanish, and Italian quotations. *St Evremont* says, that to paint the folly of a *pedant*, we must represent him as turning all conversation to some one science or subject he is best acquainted with. There are *pedants* of all conditions, and all robes. *Wicquefort* says, an ambassador always attentive to formalities and decorums is nothing else but a *political pedant*.

* **PEDANTICK.** } *adj.* [*pedantesque*, Fr. from

* **PEDANTICAL.** } *pedant.*] Awkwardly ostentatious of learning.—*Mr Cheeke* had eloquence in the Latin and Greek tongues; but for other sufficiencies *pedantick* enough. *Hayward*.—When we see any thing in an old satyr that looks for-

ced and *pedantick*, we ought to consider how it appeared in the time the poet writ. *Addison*.—The obscurity is brought over them by ignorance and age, made yet more obscure by their *pedantic* elucidators. *Felton*.—A spirit of contradiction is so *pedantick* and hateful, that a man should watch against every instance of it. *Watts*.—We now believe the Copernican system; yet we shall still use the popular terms of sun-rise and sun-set, and not introduce a new *pedantick* description of them from the motion of the earth. *Bentley*.

* **PEDANTICALLY.** *adv.* [from *pedantic*.] With awkward ostentation of literature.—The earl of Roscommon has excellently rendered it; too faithfully, is, indeed, *pedantically*. *Dryden*.

(1.) * **PEDANTRY.** *n. f.* [*pedanterie*, French.] Awkward ostentation of needless learning.—'Tis a practice that savours much of *pedantry*. *Brown*.—Horace has enticed me into this *pedantry* of quotation. *Cowley*.—It is in Latin, if I may be allowed the *pedantry* of a quotation, *non persuadebis, etiam si per suaseris*. *Addison*.—The young nobility are sent, for fear of contracting any airs of *pedantry* by a college education. *Swift*.

(2.) **PEDANTRY**, or **PEDANTISM**, the quality or manner of a *pedant*. See **PEDANT**. To swell up little and low things, to make a vain show of science, to heap up Greek and Latin without judgment, to tear those to pieces who differ from us about a passage in Suetonius or other ancient authors, or in the etymology of a word, to stir up all the world against a man for not admiring Cicero enough, to be interested for the reputation of an ancient as if he were our next of kin, is what we properly call *pedantry*. Nor is that species of *modern pedantry* less ridiculous, however common, which leads English authors to make an ostentatious display of their proficiency in the modern languages, by introducing French phrases, and quotations from French, Spanish, or Italian writers; and by writing *Jean, Louis, Carlos, Pedro*, &c. instead of *John, Lewis, Charles, Peter*, &c. See **CI-DEVANT**, and **LOUIS**. See also *Dr Johnson's* just censure of such *pedantry* and affectation, under **ENGLISH LANGUAGE**, page 674-5, &c.

PEDARIANS, in Roman antiquity. *Dr Middleton* thus accounts for the origin of the word. He says, that though the magistrates of Rome had a right to a place and vote in the senate both during their office and after it, and before they were put upon the roll by the censors, yet they had not probably a right to speak or debate there on any question, at least in the earlier ages of the republic. For this seems to have been the original distinction between them and the ancient senators, as it is plainly intimated in the formulae of the consular edict sent abroad to summon the senate, which was addressed to all senators, and to all those who had a right to vote in the senate. From this distinction, those who had only a right to vote were called in ridicule *pedarian*; because they signified their votes by their feet, not their tongues, and, upon every division of the senate, went over to the side of those whose opinion they approved. It was in allusion to this old custom, which seems to have been wholly dropt in the latter ages of the republic, that the mute part of the senate continued still to be called by the name *pedarians*, as

Cicero

Cicero informs us, who, in giving an account to Atticus of a certain debate and decree of the senate upon it, says that it was made with the eager and general concurrence of the pedarians, though against the authority of all the consulars.

PEDATURA, in Roman antiquity, a space or proportion of a certain number of feet set out. This word often occurs in writers on military affairs: as in Hyginus de Castrametatione, *meminerimus itaque ad computationem cohortis equitatis miliarie pedaturam ad 1360 dari debere*; which is thus explained: The pedatura, or space allowed for a *cohortis equitata* or provincial cohort, consisting of both horse and foot, could not be the same as the pedatura of an uniform body of infantry, of the same number, but must exceed it by 360 feet, for the proportion of the room of one horseman to one foot soldier he assigns as two and a half to one.

* **To PEDDLE**. *v. n.* To be busy about trifles. *Ainsf.* It is commonly written *piddle*: as, what *piddling* work is here!

(1.) **PEDEE, GREAT**, a large navigable river of S. Carolina, which rises in N. Carolina, in the Appalachian mountains, where it is called **YADKIN**, thence it runs E. 50 miles to Mount Ararat, thence S. by E. into S. Carolina, where it is joined by the Waree, the Little Pedee, Lynch's River, Black River, &c. and falls into the Atlantic, 6 miles below George-town.

(2.) **PEDEE, LITTLE**, a river of S. Carolina, formed of several head waters, that rise in N. Carolina; and after crossing the divisional line, runs due S. till it falls into the great Pedee, 32 miles above its mouth and 16 m. below Queenborough.

PEDEMONTE, a town of Naples in *Lavora*; 20 miles NNE. of Capua.

PEDENA, a town and bishop's see in *Istria*; 25 miles SSE. of Trieste and of Cabo de *Istria*; and 64 NE. of *Rovigno*. Lon. 14. 30. E. Lat. 45. 34. N.

PEDERASTS, the same with **SODOMITES**.

* **PEDERERO**. *n. f.* [*pedrero*, Spanish, from *pedra*, a stone with which they charged it.] A small cannon managed by a swivel. It is frequently written *paterero*.

PEDERNEE, a town of France, in the dep. of the North Coast; 4½ miles NW. of Guingamp, and 10½ SW. of Lannion.

PEDERNEIRA, a sea port town of Portugal, in *Extremadura*, on the W. coast; containing about 1300 inhabitants; 18 miles SW. of *Leyria*, and 18 NE. of *Peniche*. Lon. 9. 40. E. Ferro. Lat. 39. 31. N.

(1.) * **PEDESTAL**, *n. f.* [*pedestal*, Fr.] The lower member of a pillar; the basis of a statue.—

The poet bawls,

And shakes the statues and the pedestals. *Dryd.*—The fore part of the pedestal was curiously embossed with a triumph. *Addison*.—

So stiff, so mute! some statue would you swear
Stept from it's pedestal to take the air. *Pope*.

(2.) **PEDESTAL**. See **ARCHITECTURE**, *Index*; and **COLUMN**.

PEDESTRIAN, *adj.* Travelling on foot. See the next article.

* **PEDESTRIOUS**. *adj.* [*pedestris*, Latin.] Not

Winged; going on foot.—Men conceive they never lie down, and enjoy not the position of rest ordained unto all *pedestrious* animals. *Brown*.

PEDIACI, or } in Grecian antiquity. The city **PEDIÆANS**, } of Athens was anciently divided into 3 different parts; one on the descent of an hill; another on the sea-shore; and a third in a plain between the other two. The inhabitants of the middle region were called *Πεδιαιοι*, *Pedicians*, formed from *πῶς*, plain or flat, or, as Aristotle will have it, *Pediaci*: those of the hill, *Diacrians*; and those of the shore, *Paralians*. Their quarters usually composed so many different factions. *Pisistratus* made use of the *Pedizans* against the *Diacrians*. In the time of Solon, when a form of government was to be chosen, the *Diacrians* chose it democratic; the *Pedizans* demanded an aristocracy, and the *Paralians* a mixed government.

* (2.) **PEDICLE**. *n. f.* [from *pedis*, Lat. *pedicule*, Fr.] The footstalk, that by which a leaf or fruit is fixed to the tree.—The cause of the holding green, is the close compact substance of their leaves and *pedicles*. *Bacon*.

(1.) **PEDICLE**. See **BOTANY**, § 82, 1.

* **PEDICULAR**. *adj.* [*pedicularis*, Latin, *pediculaire*, Fr.] Having the phthiriasis or lousy distemper. *Ainsworth*.

PEDICULARIS, in botany, *Rattle Coxcomb*, or *Louise-wort*, a genus of the angiospermia order belonging to the didynamia class of plants; and in the natural method ranking under the 40th order, *Perfonate*.

PEDICULUS, the Louse, in entomology, a genus of insects belonging to the order of aptera. It has six feet, two eyes, and a sort of sting in the mouth; the feelers are as long as the thorax; and the belly is depressed and sublobated. It is an oviparous animal. They are not peculiar to man alone, but infest other animals, as quadrupeds and birds, and even fishes and vegetables; but these are of peculiar species on each animal, according to the particular nature of each, some of which are different from those which infest the human body. Nay, even insects are infested with vermin which feed on and torment them. Several kinds of beetles are subject to lice; but particularly that kind called the *lousy beetle*. The lice on this are very numerous, and will not be shook off. The earwig is often infested with lice, just at the setting on of its head: these are white, and shining like mites, but they are much smaller; they are round-backed, flat-bellied, and have long legs, particularly the foremost pair. Snails of all kinds, but especially the large naked sorts, are very subject to lice; which are continually seen running about them, and devouring them. Numbers of little red lice, with a very small head, and in shape resembling a tortoise, are often seen about the legs of spiders, and they never leave the animal while he lives; but if he is killed, they almost instantly forsake him. A species of whitish lice are found on humble bees; they are also found upon ants; and fishes are not less subject to them than other animals. Kircher tells us, that he found lice also on flies. The louse which infests the human body makes a very curious appearance through a microscope. It has such a transparent

transparent shell or skin, that we are able to discover more of what passes within its body than in most other living creatures. It has naturally three divisions, the head, the breast, and the tail part. In the head appear two fine black eyes, with a horn that has five joints, and is surrounded with hairs standing before each eye; and from the end of the nose or snout there is a pointed projecting part, which serves as a sheath or case to a piercer or sucker, which the creature thrusts into the skin to draw out the blood and humours which are its destined food; for it has no mouth that opens in the common way. This piercer or sucker is judged to be 700 times smaller than a hair, and is contained in another case within the first, and can be drawn in or thrust out at pleasure. The breast is very beautifully marked in the middle; the skin is transparent, and full of little pits; and from the under part of it proceed six legs, each having five joints, and their skin all the way resembling shagreen, except at the end, where it is smoother. Each leg is terminated by two claws, which are hooked, and are of an unequal length and size. These it uses as we would a thumb and middle finger; and there are hairs between these claws as well as all over the legs. On the back part of the tail there may be discovered some ring-like divisions, and a sort of marks which look like the strokes of a rod on the human skin; the belly looks like shagreen, and towards the lower end it is very clear, and full of pits; at the extremity of the tail there are two semicircular parts all covered with hairs, which serve to conceal the anus. When the louse moves its legs, the motion of the muscles, which all unite in an oblong dark spot in the middle of the breast, may be distinguished perfectly, and so may the motion of the muscles of the head when it moves its horns. We may likewise see the various ramifications of the veins and arteries, which are white, with the pulse regularly beating in the arteries. But the most surprising of all the sights is the peristaltic motion of the guts, which is continued all the way from the stomach down to the anus. If one of these creatures, when hungry, be placed on the back of the hand, it will thrust its sucker into the skin, and the blood which it sucks may be seen passing in a fine stream to the fore part of the head; where, falling into a roundish cavity, it passes again in a fine stream to another circular receptacle in the middle of the head; thence it runs through a small vessel to the breast, and then to a gut which reaches to the hinder part of the body, where, in a curve, it turns again a little upward; in the breast and gut the blood is moved without intermission, with a great force; especially in the gut, where it occasions such a contraction of the gut as is very surprising. In the upper part of the crooked ascending gut above-mentioned, the propelled blood stands still, and seems to undergo a separation, some of it becoming clear and waterish, while other black particles are pulled forward to the anus. If a louse is placed on its back, two bloody darkish spots appear; the larger in the middle of the body, the lesser towards the tail; the motions of which are followed by the pulsation of the dark bloody

spot, in or over which the white bladder seems to lie. This motion of the systole and diastole is best seen when the creature begins to grow weak; and on pricking the white bladder, which seems to be the heart, the creature instantly dies. The lower dark spot is supposed to be the excrement in the gut. Lice have been supposed to be hermaphrodites; but this is erroneous; for Mr. Liewenhoeck observed, that the males have stings in their tails, which the females have not. And he supposes the smarting pain which those creatures sometimes give, to be owing to their stinging with these stings when made uneasy by pressure or otherwise. He says, that he felt little or no pain from their suckers, though six of them were feeding on his hand at once. To know the true history and manner of breeding of these creatures, M. Liewenhoeck put two female lice into a black stocking, which he wore night and day. He found, on examination, that in six days one of them had laid above 50 eggs; and, upon dissecting it, he found as many yet remaining in the ovary; whence he concludes that in 12 days it would have laid 100 eggs. These eggs naturally hatch in six days, and would then probably have produced 50 males, and as many females; and these females coming to their full growth in 18 days, might each of them be supposed after 12 days more to lay 100 eggs; which eggs, in six days more, might produce a young brood of 5000: so that in eight weeks, one louse may see 5000 of its own descendants. Signior Rhedi, who has more attentively observed these animals than any other author, has given several engravings of the different species of lice found on different animals. Men, he observes, are subject to two kinds; the common louse and the crab-louse. He observes also, that the size of the lice is not at all proportioned to that of the animal which they infest; since the starling has them as large as the swan. Some kinds of constitutions are more apt to breed lice than others; and in some places of different degrees of heat, they are certain to be destroyed upon people who in other climates are over-run with them. Cleanliness is doubtless the grand secret by which to keep clear from lice, especially when we wear woollen clothes: It is also necessary where there is any danger, to take nourishing, succulent food, and to use wholesome drink; to rub with garlic and mustard, to take treacle inwardly, also salted and acid food, to bathe, and to foment the body with a decoction of lupines, or of gall nuts; but the most effectual remedies are sulphur and tobacco, mercurial ointment, black pepper, and vinegar. Monkey's and some Hottentots, we are told, eat lice; and are thence denominated PHTHIROPHAGES. On the coast of the Red Sea it is reported, that there is a nation, of small stature and of a black colour, who use locusts for the greatest part of their food, prepared only with salt. On such food these men live till 40, and then die of a pedicular or lousy disease. A kind of winged lice devour them, their body putrefies, and they die in great torment. It is also a fact that the negroes on the west coast of Africa take great delight in making their women clear their bodies

bodies of lice, and those latter devour them with greediness as fast as they find them. In ancient medicine lice were esteemed aperient, febrifuge, and proper for curing a pale complexion. The natural repugnance to those ugly creatures (says Lemery) perhaps contributed more to banish the fever than the remedy itself. In the jaundice five or six were swallowed in a soft egg. In the suppression of urine, which happens frequently to children at their birth, a living louse is introduced into the urethra, which, by the tickling which it occasions in the canal, forces the sphincter to relax, and permits the urine to flow. A bug produces the same effect. Farriers have also a custom (says M. Bourgeois) of introducing one or two lice into the urethra of horses when they are seized with a retention of urine, a disease pretty common among them. But, according to the Continuation of the *Materia Medica*, to use the pedicular medicine with the greatest advantage, one would need to be in Africa; where those insects are carefully sought after and swallowed as a delicious morsel. The great distinction between those which infest mankind is into the head and body louse. The former is hard and high coloured, and the latter less compact and more of ashen colour. If it were possible to give a reason why some families of the same species stick to the head and others to the clothes, &c. it would also, in all probability, be possible to understand the nature of many contagious diseases.

(1.) **PEDIGREE:** *n. f.* [*pér* and *degré*, Skinner.] Genealogy; lineage; account of descent.—I am no herald to enquire of men's pedigree. *Shak.*

You tell a pedigree

Of threescore and two years.

Shak.

—Alterations of surnames, which in former ages have been very common, have obscured the truth of our pedigrees. *Camden.*

To the old heroes hence was giv'n

A pedigree which reached to heaven.

Waller.

—The Jews preserved the pedigrees of their several tribes, with a more scrupulous exactness than any other nation. *Atterbury.*

(2.) **PEDIGREE.** See **CONSANGUINITY**, **DESCENT**, **GENEALOGY**, and **INHERITANCE**, § 3.

PEDILUVIUM, BATHING OF THE FEET.

The uses of warm bathing in general, and of the pediluvium in particular, are so little understood, that they are often preposterously used, and sometimes as injudiciously abstained from. Warm bathing is of no service where there is an irremediable obstruction, though, by its taking off from a spasm in general, it may seem to give a moment's ease; nor does it draw from the distant parts, but often hurts by pushing against matter that will not yield with a stronger impetus of circulation than the stretched and diseased vessel can bear: so that where there is any suspicion of scirrhus, warm bathing of any sort should never be used. On the other hand, where obstructions are of long standing, and the impacted matter is not obstinate, warm baths may be of great use to resolve them quickly. In recent colds, with slight humoral peripneumonies, they are frequently an immediate cure. This they effect by increasing the force of the circulation, opening the skin, and driving freely through the lungs that lentor which

stagnated or moved slowly in them. As thus conducing to the resolution of obstructions, they may be considered as short and safe fevers; and in using them we imitate nature, which by a fever often carries off an obstructing cause of a chronic ailment. Borelli, Boerhaave, and Hoffman, are all of opinion, that the warm pediluvium acts by driving a large quantity of blood into the parts immersed. But arguments must give way to fact: the experiments related in the *Medical Essays* seem to prove to a demonstration, that the warm pediluvium acts by rarifying the blood. A warm pediluvium, when rightly tempered, may be used as a safe cordial, by which circulation can be roused, or a gentle fever raised; with this advantage over the cordials and sudorifics, that the effect of them may be taken off at pleasure.

(1.) * **PEDIMENT.** *n. f.* [*pedis*, Lat.] In architecture, an ornament that crowns the ordonnances, finishes the fronts of buildings, and serves as a decoration over gates, windows and niches: it is ordinarily of a triangular form, but sometimes makes the arch of a circle. *DiB.*

(2.) * **PEDIMENT.** See **ARCHITECTURE**, *Index*.

PEDINAIG-DURGUM, a town of Indostan, in Mysore.

PEDIR, a town of Sumatra, on the N. coast, belonging to the king of Achcen, 40 miles E. of Achcen. *Lon.* 66. 36. E. *Lat.* 5. 22. N.

(1.) * **PEDLER.** *n. f.* [*a petty dealer*; a contraction produced by frequent use.] One who travels the country with small commodities.—

All as a poor pedler he did wend,

Bearing a trusse of trifles at his back. *Spens.*
—If you would hear the pedler at the door, you would never dance again after a tabor and pipe.

Shak.

He is wit's pedler, and retails his wares

At wakes and waifalls, meetings, markets, fairs. *Shak.*

Had fly Ulysses at the sack

Of Troy brought thee his pedler's pack. *Cleavel.*
—A narrow education may beget among some of the clergy in possession such contempt for all innovators, as merchants have for pedlers. *Swift.*

Atlas was so exceeding strong,

He bore the skies upon his back,

Just as a pedler does his pack.

Swift.

(2.) **PEDLER**, or **PEDLAR**, a travelling foot-trader. See **HAWKER**. In Britain (and formerly in France) the pedlars are despised; but it is otherwise in other countries. In Spanish America, the business is so profitable, that it is thought by no means dishonourable; and there are many gentlemen in Old Spain, who, when their circumstances are declining, send their sons to the Indies to retrieve their fortunes in this way. Almost all the commodities of Europe are distributed through the southern continent of America by pedlars. They come from Panama to Païta by sea; and in the road from the port last mentioned, they make Peura their first voyage to Lima. Some take the road through Caxamalía; others through Truxillo, along the shore from Lima. They take their passage back to Panama by sea, and perhaps take with them a little cargo of brandy. At Panama they again stock themselves with European goods, returning by sea to Païta, where they

they are put on shore; there they hire mules and load them, the Indians going with them in order to lead them back. Their travelling expences are next to nothing; for the Indians are brought under such subjection, that they find lodging for them, and provender for their mules, frequently thinking it an honour done them for their guests to accept of this for nothing, unless the stranger now and then, out of generosity or compassion, makes a small recompense. In Poland, where there are few or no manufactures, almost all the merchandize is carried on by pedlars, who are said to be generally Scotsmen, and who, in the reign of Charles II. are said to have amounted to no fewer than 530,000.

* **PEDLERY.** *adj.* [from *pedler*.] Wares sold by pedlars.—The sufferings of those of any rank are trifles in comparison of what all those are who travel with fish, poultry, *pedlery* ware to sell. *Swiss*.

* **PEDLING.** *adj.* Petty dealing; such as pedlars have.—This *pedling* profit I may resign. *Decay of Piety*.

PEDN BOAR POINT, a cape of Cornwall, on the S. coast; 6 miles SE. of Lizard Point. Lon. 5. 8. W. Lat. 50. 6. N.

(1.) * **PEDOBAPTISM.** *n. f.* [*παιδο* and *βαπτισμα*.] Infant baptism. *Did.*

(2.) **PEDOBAPTISM.** See **BAPTISM**, § 6, 7, 9, 10.

* **PEDOBAPTIST.** *n. f.* [*παιδο* and *βαπτιστης*.] One that holds or practises infant baptism.

PEDOMETER, or **PODOMETER**, [from *πους*, *foot*, and *μετρον*, *measure*.] a mechanical instrument, in form of a watch, consisting of various wheels with teeth, catching in one another, all disposed in the same plane; which, by means of a chain or string fastened to a man's foot, or to the wheel of a chariot, advance a notch each step, or each revolution of the wheel; so that the number being marked on the edge of each wheel, one may number the paces, or measure exactly the distance from one place to another. There are some of them which mark the time on a dial-plate, and are in every respect much like a watch, and are accordingly worn in the pocket like a watch. See **PERAMBULATOR**, and *Plate* 266.

PEDRA, an island near the coast of Portugal; 4 miles S. of Oporto bay. Lon. 10. 10. E. Ferro. Lat. 41. 6. N.

PEDRAZA, a town of Spain, in Old Castile, famous for being the birth place of the emperor Trajan, according to Mr Crutwell; but others say he was born in ITALICA, now SEVILLE. It has an ancient castle, in which the dauphin Francis and Henry, sons of Francis I. were confined 4 years. It is 21 miles NE. of Segovia.

PEDRED. See **PARRET**.

(1.) **PEDRO**, Don. See **PETER**, N° 13.

(2.) **PEDRO BAY**, a bay on the S. coast of Jamaica. Lon. 77. 41. W. Lat. 17. 53. N.

(3.) **PEDRO BLUFF**, a cape on the above bay.

(4.) **PEDRO MUNOZ**, a town of Spain, in New Castile; 41 miles S. of Huete.

(5.) **PEDRO POINT**, the most northern cape of Ceylon, opposite Point Calymere on the continent of India. Lon. 80. 27. E. Lat. 9. 52. N.

(6.) **PEDRO POINT**, a cape of Jamaica, on the N. coast. Lon. 78. 12. W. Lat. 18. 28. N.

(7.) **PEDRO**, **PORT ST.**, a sea port town of Brazil, on the SE. coast, at the mouth of the Plata.

(8.) **PEDRO**, **ST.**, one of the MARQUESAS ISLANDS. Lon. 138. 51. W. Lat. 9. 58. S.

(9.) **PEDRO**, **ST.**, a town of Cuba, 31 miles SW. of Bayamo.

(10.) **PEDRO**, **ST.**, a town of E. Florida, 44 miles ESE. of St Mark.

(11, 12.) **PEDRO**, **ST.**, a town and river of Mexico, in Tlascala.

(13, 14.) **PEDRO**, **ST.**, 2 towns of Peru; 1 in Truxillo, near the coast of the South Sea; 2 in Lambeyque, on the Pacafinayo, mostly inhabited by Indians.

(15.) **PEDRO**, **ST.**, an island of Spain, SE. of Cadiz.

(16.) **PEDRO**, **ST. DE SUL**, a town of Portugal, in Beira; 104 miles NW. of Viseu.

(17.) **PEDRO**, **ST. DE TABERNA**, a town of Spain, in Arragon; 12 miles N. of Ainsa.

PEDROAOS, a town of Portugal, in Alentejo; 9 miles SW. of Moura.

PEDROGAON, a town of Portugal, in Estremadura; 27 miles NE. of Thomar.

PEDROSA, a town of Spain, in Old Castile; 5 miles SE. of Najera.

PEDUNCLE, in botany. See **BOTANY**, *Index*.

(1.) **PEEBLES**, or **TWEEDDALE**, a county of Scotland, 25 miles long and 18 broad; bounded on the E. by Ettrick Forrest, S. by Annandale, W. by Clydesdale, and N. by Mid Lothian. It is a hilly country, well watered by the Tweed, the Yarrow, and a great number of smaller streams that fertilize the valleys, which produce good crops of oats, barley, and wheat. All the rivers abound with trout and salmon. About the middle of this county is the mountain of Braidalb, from the top of which the sea may be seen on each side of the island. Tweeddale abounds with limestone and freestone. The hills are generally as green as the downs in Suffex, and feed innumerable flocks of black-faced sheep, that yield great quantities of excellent wool. The country is well shaded with woods and plantations, abounds with all the necessaries of life, and is adorned with many fine seats and populous villages. The earls of March were hereditary sheriffs of Tweeddale. In the church-yard of Drumelzier, belonging to an ancient branch of the Hay family, the famous Merlin is said to be buried. There was an old traditional prophecy, that the two kingdoms should be united when the waters of the Tweed and the Pansel should meet at his grave. This meeting happened by an inundation at the accession of James VI. to the crown of England.

(2.) **PEEBLES**, a parish in the above county, 10 miles long from N. to S. and 5½ broad from E. to W. containing 18,210 acres. The Tweed runs through it from E. to W. and divides it into nearly two equal parts. The surface consists of verdant hills and excellent pasture; the climate is healthy; the soil is clay and sand, and produces excellent crops of barley, oats, pease, turnips, potatoes, &c. The population in 1791 was 1920: increase 24, since 1755: The number of horses was

was 200; of sheep, 8000; and black cattle, 500. There are relics of a distinct Roman *Castra Stativa* at Lyne, 4 miles W. of the town, 500 feet square, with 2 ditches and 3 ramparts comprehending about 7 acres. Relics of 4 British camps are also extant, 3 miles S. of the Roman, with many others at greater distances, as well as of watch towers, &c.

(3.) **PEEBLES**, [from the *pebbles* abounding near it,] an ancient royal borough in the centre of the above parish, on the Tweed, over which it has an elegant stone bridge of 5 arches. In ancient times it was often a place of royal residence. K. James I. is said to have written his poem, entitled *Peebles to the Play*, in it; in which he describes the diversions usually held in it at the great annual festival, at Beltien. Peebles consists of a new and old town, and has of late been much improved in buildings, trade and manufactures. It is famous for carpets and ferges. It has a weekly market for corn and cattle, and fairs in Jan. March, May, July, Aug. Sept. Oct. Nov. and Dec. It is 20 miles S. of Edinburgh, and 40 WSW. of Berwick. Lon. 3. o. W. Lat. 55. 38. N.

(4.) **PEEBLES**, a small river in the above parish, which runs through the N. part of the town into the Tweed, called also *Eddlestone water*.

(1.) **PEEK**, *n. f.* in the sea-language, a word used in various senses. The anchor is said to be a-peek, when the ship being about to weigh comes over her anchor in such a manner that the cable hangs perpendicularly between the hawse and the anchor. *To heave a-peek*, is to bring the peek so that the anchor may hang a-peek. A ship is said to *ride a-peek*, when, lying with her main and fore-wards hoisted up, one end of her yards is brought down to the shrouds, and the other raised up on end: which is chiefly done when she lies in rivers, lest other ships falling foul of the yards should break them. *Riding a broad peek*, denotes much the same, excepting that the yards are only raised to half the height.

(2.) **PEEK** is also used for a room in the hold, extending from the bitts forwards to the stern: in this room men of war keep their powder, and merchant-men their victuals.

PEEK'S KILL, a village of New York, 50 miles N. of New York, where some magazines of the Americans were destroyed by the British troops, in 1777. See AMERICA, § 28.

(1.) **PEEL**, in geography, a small island, on the W. coast of the isle of Man. It is naturally very strong, but was rendered much more so, by Thomas Earl of Derby, who encompassed it with a wall, towers, and other fortifications; so that in those days it was impregnable. A small garrison is still kept in it. It has an ancient cathedral, dedicated to St Germain, the first bishop of Man; besides the bishop's palace, and other relics of antiquity. It has also a fort with several cannons. It is now chiefly used as a prison for all offenders against ecclesiastical laws, and is called *St Germain's Prison* from the cathedral. Lon. 4. 40. W. Lat. 54. 13. N.

(2.) **PEEL**, a town of the isle of Man, formerly called *Holm Town*, separated from the above island, by a narrow channel, from 7 to 10 fathoms deep. It is 14 miles W. of Douglas.

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(3.) * **PEEL**. *n. f.* [*pellis* Lat. *pelure*, French.] The skin or thin rind of any thing.

(4.) * **PEEL**. *a. f.* [*paele*, French.] A broad thin board with a long handle, used by bakers to put their bread in and out of the oven.

* **To PEEL**. *v. a.* [*peler*, Fr. from *pellis*, Lat.] 1. To decorticate; 2. to flay.—

The skillful shepherd *peel'd* me certain wands
And stuck them up before the milkome ewes.

Shak.

a. [from *piller*, Fr. to rob.] To plunder. According to analogy this should be written *pill*.—

Who once just and temperate conquer'd well,
But govern'd ill the nations under yoke,
Peeling their provinces.

Milton.

To peel the chiefs, the people to devour;
These, traitor, are thy talents.

Dryden.

PEELE, Francis, a dramatic writer who flourished in the reign of Q. Elizabeth. He was born in Devonshire; studied at Oxford in 1573; and took his degree of M. A. in 1579. He was a good pastoral poet, and his plays were acted, says Wood, with great applause.

* **PEELER**. *n. f.* [from *peel*.] 1. One who strips or flays. 2. A robber; a plunderer.—

Yet otes with her sucking a *peeler* is found.

Tupper.

—As 'tis a *peeler* of land, sow it upon lands that are rank. *Mortimer*.

PEEM, a town of Holstein, 9 m. W. of Eutyn. **PEENANG**, an island in the E. Indian Ocean, in the Straits of Malacca; 30 miles in circumference. Lon. 98. 40. E. Lat. 5. 32. N.

PEENE, a river of Germany, which separates Sweden from Prussian Pomerania, and falls into the Baltic, a little W. of the isle of Usedom: in Lon. 31. 25. E. Ferro. Lat. 54. 10. N.

PEENEMUNDE SCHANZ, a town and fort of Saxony, in the isle of Usedom, near the mouth of the Peene. In 1715, it was taken by the Prussians; in 1757 by the Swedes; in 1758 retaken by the Prussians and its harbour destroyed; but soon after retaken by the Swedes. It is 6 miles N. of Wolgast. For Lon. and Lat. see **PEENE**.

* **PEEP**. *n. f.* 1. First appearance; as, at the *peep* and first break of day. 2. A fly look.—Would not one think, the aimackmaker was crept out of his grave to take t'other *peep* at the stars? *Swift*.

* **To PEEP**. *v. n.* [This word has no etymology, except that of *Skinner*, who derives it from *opheusen*, Dutch, to lift up; and of *Casaubon*, who derives it from *οφινωλε*, a *spy*; perhaps it may come from *pip*, *pipio*, Latin, to cry as young birds: when the chickens first broke the shell and cried, they were said to begin to *pip* or *peep*; and the word that expressed the act of crying, was by mistake applied to the act of appearing that was at the same time: this is offered till something better may be found.] 1. To make the first appearance.

Seeing at last herself from danger rid.

Peeps forth and soon renews her native pride.

Spenser.

The true blood which *peeps* forth fairly
through it,

Do plainly give you out an unstain'd shepherd.

Shak.

From this league

Peep'd harms that menac'd him.

Shak.

T

1 can

I can see his pride
Peep through each part of him. *Shak.*
 The tim'rous maiden blossoms on each bough
Peeps forth from their first blushes. *Crafhaw.*
 She makes th' obedient ghosts *peep* trembling
 through the ground. *Rajcommon.*
 Earth, but not once, her visage rears,
 And *peeps* upon the seas. *Dryden.*

Fair as the face of nature did appear,
 When flowers first *peep'd*. *Dryden.*
 —Printing and letters had just *peeped* abroad in
 the world. *Atterbury.*—Though but the very
 white end of the sprout *peep* out, in the outward
 part of the couch, break it open. *Mortimer.*—
 Hills *peep* o'er hills, and Alps on Alps arise.

Most souls but *peep* out once an age. *Pope.*
 2. To look sily, closely or curiously; to look
 through any crevice.—

Who is the same which at my window *peeps*?
Spenser.

Come thick night!
 That my keen knife see not the wound it makes;
 Nor heaven *peep* through the blanket of the dark,
 To cry hold. *Shak.*
 Some that will evermore *peep* thro' their eyes,
 And laugh like parrots at a bag-piper. *Shak.*
 —A fool will *peep* in at the door. *Becluf. xxi. 23.*—
 Lattice-windows give the spy
 Room but to *peep* with half an eye. *Cleavel.*
 All doors are shut, no servant *peeps* abroad.

The darling flames *peep* in *Dryden.*
 The feather'd people look down to *peep* on
 me. *Dryden.*
 —Those remote and vast bodies were formed not
 merely to be *perpt* at through an optick glass.
Bentley.

O my male, just distance keep;
 Thou art a maid, and must not *peep*. *Prior.*
 In vain his little children, *peeping* out
 Into the mingling storm, demand their fire.

* PEEPER. *n. f.* Young chickens just breaking
 the shell.—

Snails the first course and *peepers* crown the
 meal. *Bramhall.*

* PEEPHOLE. } *n. f.* [*peep* and *bole*.] Hole
 * PEEPINGHOLE. } through which one may
 look without being discovered.—The fox spied
 him through a *peepinghole* he had found out.
L'Estrange.

By the *peephholes* in his crest,
 Is it not virtually confessed,
 That there his eyes took distant aim? *Prior.*

(1.) PEER, in geography, a ci-devant county
 of Germany, in the late bishoprick of Liège, now
 annexed to the French empire, and included in
 the department of the Ourte.

(2.) PEER, a town of France, late capital of the
 above county, now in the dep. of Ourte, 30 miles
 N. of Liège, and 30 N.E. of Louvain.

(3.) * PEER. *n. f.* [*pair*, French.] 1. Equal; one
 of the same rank.—

His *peers* upon this evidence
 Hate found him guilty of high treason. *Shak.*
 —Amongst a man's *peers*, a man shall be sure of
 familiarity. *Bacon.*—

Oh! what is man, great maker of mankind?
 That thou adorn'st him with so bright a mind,
 Mak'st him a king, and ev'n an angel's *peer*.
Deviex.

2. One equal in excellence or endowments.—
 All these did wife Ulysses lead, in counsel
peer to Jove. *Chapman.*
 In song he never had his *peer*. *Dryden.*

3. Companion; fellow.—
 He all his *peers* in beauty did surpass. *Spenser.*
 In the dances with what spight
 Of your *peers* you were beheld,
 That at every motion swell'd. *Ben Jonson.*
 Who bear the bows were knights in Ar-
 thur's reign,

Twelve they, and twelve the *peers* of Charle-
 magne. *Dryden.*

4. A nobleman as distinct from a commoner; of
 nobility we have five degrees, who are all never-
 theless called *peers*, because their essential privi-
 leges are the same.—

I see thee compass with thy kingdom's *peers*,
 That speak my salutations. *Shak.*
 King Henry's *peers* and chief nobility
 Destroy'd themselves. *Shak.*

Whatever be your birth, you're sure to be
 A *peer* of the first magnitude to me. *Dryden.*

(4.) PEER was anciently applied to the vassals
 or tenants of the same lord, who were called *peers*,
 because they were all equal in condition, and
 obliged to serve and attend him in his courts;
 and *peers* in *seffs*, because they all held fiefs
 of the same lord. The term *peers* is now applied to
 those who are impannelled in an inquest upon a
 person, for convicting or acquitting him of any of-
 fence laid to his charge: and the reason why the
 jury is so called, is, because, by the common law
 and custom of this kingdom, every person is to be
 tried by his *peers* or equals; a lord by the lords,
 and a commoner by commoners. See *JURY*.

(5.) PEER OF THE REALM, a noble lord who
 has a seat and vote in the House of Lords or
 PEERS. These lords are called *peers*, because
 though there is a distinction of degrees in our no-
 bility, yet in public actions they are equal, as in
 their votes in parliament, and in trying any noble-
 man or other person impeached by the commons.
 &c. See *PARLIAMENT*, § 6—11.

(6.) PEERS, HOUSE OF, or HOUSE OF LORDS,
 forms one of the three estates of Parliament. See
LORDS, § 1, II, and *PARLIAMENT*, § 6—11. In a
 judicative capacity, the house of *peers* is the su-
 preme court of the kingdom, having at present no
 original jurisdiction over causes, but only upon
 appeals and writs of error; to rectify any injustice
 or mistake of the law committed by the courts
 below. To this authority they succeeded of course,
 upon the dissolution of the *AULA REGIA*. For
 as the barons of parliament were constituent mem-
 bers of that court, and the rest of its jurisdiction
 was dealt out to other tribunals, over which the
 great officers who accompanied those barons were
 respectively delegated to preside, it followed, that
 the right of receiving appeals, and superintend-
 ing all other jurisdictions, still remained in that
 noble assembly, from which every other great
 court was derived. They are therefore in all cases
 the last resort, from whose judgment no farther
 appeal

appeal is permitted; but every subordinate tribunal must conform to their determination. See LORDS, NOBILITY, &c.

(7.) PEERS, SCOTTISH. See SCOTTISH PEERS.

(8.) PEERS, THE CI-DEVANT FRENCH, were 12 great lords of that kingdom, of whom 6 were dukes and 6 counts; and of these 6 were ecclesiastics and 6 laymen; thus the Abp. of Rheims, and the Bp. of Laon and Langres, were dukes and peers; and the Bps. of Chalons on the Marne, Noyons, and Beauvais, were counts and peers. The dukes of Burgundy, Normandy, and Aquitaine, were lay peers and dukes; and the counts of Flanders, Champagne, and Toulouse, lay peers and counts. These peers assisted at the coronation of kings, either in person or by their representatives, where each performed the functions attached to his respective dignity; but as the six lay peerages were all united to the crown, except that of the counts of Flanders, six lords of the first quality were chosen to represent them: but the ecclesiastical peers generally assisted in person. The title of peer was afterwards bestowed on every lord whose estate was erected into a peerage; the number of which, as it depended entirely on the king, was uncertain.

* To PEER, *v. n.* [By contraction from *appear*.]

1. To come just in sight.—

Honour *peereth* in the meanest habit. *Shak.*

Yet many of your horsemen *peer*. *Shak.*

Ev'n through the hollow eyes of death

I spy life *peering*. *Shak.*

See how his gorget *peers* above his gown.

Ben Jonson.

2. To look narrowly; to peep.—

Now for a clod-like hare in form they *peer*. *Sid.*

Hell itself will pass away,

And leave her dolorous mansions to the *peering* day. *Milton.*

Peering in maps for ports. *Shak.*

* PEERAGE, *n. f.* [*pairs*, Fr. from *peer*.] 1.

The dignity of a peer.—

Peerage is a wither'd flower. *Swift.*

2. The body of peers.—The *peerage* and commons are excluded from parliament. *Dryden.*

* PEERDOM, *n. f.* [from *peer*] Peerage. *Ainsl.*

(1.) * PEERESS, *n. f.* [female of *peer*.] The lady of a peer; a woman ennobled.—

Peeress and butler share alike the box. *Pop.*

(2.) A PEERESS may be noble by descent, creation, or marriage. If a peeress by descent or creation marries a person under the degree of nobility, she still continues noble; but if she obtains that dignity only by marriage, she loses it on her afterwards marrying a commoner; yet by courtesy she generally retains the title of her nobility. A countess or baroness may not be arrested for debt or trespass; for though, in respect of their sex, they cannot sit in parliament, they are nevertheless peers of the realm, and shall be tried by their peers, &c.

* PEERLESS, *adj.* [from *peer*.] Unequalled; having no peer.—

We stand up *peerless*. *Shak.*

Her *peerless* feature, joined with her birth,

Approves her fit for none but for a king. *Shak.*

The moon,

Rising in cloudy majesty, at length

Apparent queen, unweild' her *peerless* light. *Milton.*

Such musick worthiest were to blaze
The *peerless* light of her immortal praise. *Milton.*

With such a *peerless* majesty she stands,
As in that day she took the crown. *Dryden.*

* PEERLESSNESS, *n. f.* [from *peerless*.] Universal superiority.

PEER-PUNCHAL, mountains of Asia, which form the S. boundary of Cachemir.

PEER-WARTH, a town of Germany, in Austria, 13 miles S. of Ips.

PEESE. See PEAS, and PEATHS.

* PEEVISH, *adj.* [This word *Janus*, with more reason than he commonly discovers, supposes to be formed by corruption from *perverse* & *Skinner* rather derives it from *bevis*, as we say *wasps*.] 1. Petulant; waspish; easily offended; irritable; irascible; soon angry; perverse; morose; querulous; full of expressions of discontent; hard to please.—

She is *peevish*, sullen, froward. *Shak.*

Being wrong'd as we are by this *peevish* town,

Turn thou the mouth of thy artillery,

As we will ours, against these faucy walls. *Shak.*

—Neither will it be satire or *peevish* invective to affirm, that infidelity and vice are not much diminished. *Swift.* 2. Expressing discontent, or fretfulness.—

For what can breed more *peevish* incongruities,

Than man to yield to female lamentations? *Sidney.*

I will not presume

To send such *peevish* tokens to a king. *Shak.*

—Those deserve to be doubly laughed at, that are *peevish* and angry for nothing. *L'Estrange.*

* PEEVISHLY, *adv.* [from *peevish*.] Angrily; querulously; morosely.—He was so *peevishly* opinionative and proud, that he would neither ask nor hear the advice of any. *Hayward.*

* PEEVISHNESS, *n. f.* [from *peevish*.] Irascibility; querulousness; fretfulness; perverseness.—Some miscarriages in government might escape through the *peevishness* of others. *K. Charles*.—It will be an unpardonable, as well as childish *peevishness*, if we undervalue the advantages of our knowledge. *Locke*.—

From passion then you may be freed,

When *peevishness* and spleen succeed. *Swift.*

(1.) PEPPER, a small river of Scotland, in E. Lothian, which rises in the parish of Athelstanford, and falls into the Frith of Forth near Aberlady.

(2.) PEPPER-WASSER. See BATH, § III. N° 9.

* PEG, *n. f.* [*pegge*, Teutonic.] 1. A piece of wood driven into a hole, which does the office of an iron nail.—Solid bodies foreflew rain; as boxes and *pegs* of wood, when they draw and wind hard. *Bacon*.—The teeth are about thirty in each jaw; all of them claviculars or *peg* teeth. *Grew's Anatom.*—If he be choleric, we shall treat him like his little friend, and hang him upon a *peg* till he comes to himself. *Addison*.—The *pegs* and nails in a great building, though they are but little valued in themselves, are absolutely necessary to keep the whole frame together. *Spectator*.—A finer petticoat can neither make you richer, more virtuous

or wife, than if it hung upon a *peg*. *Swift*. 2. The pins of an instrument on which the strings are strained. —

You are well tuned now; but I'll let down
The *pegs* that make this musick. *Shak. Othello*.

3. To take a *PEG* lower; to depress; to sink: perhapp from relaxing the cords of musical instruments. —

Remember how in arms and politicks,
We still have worsted all your holy tricks,
Trepann'd your party with intrigue,

And took your gran fees down a *peg*. *Hudib*.

4. The nickname of Margaret.

* To *PEG*. *v. a.* To fasten with a *peg*. —

I will rend an oak,

And *peg* thee in his knotty entrails. *Shak.*

—Taking the shoots of the past spring, and *pegging* them down in very rich earth, by that time twelvemonth they will be ready to remove. *Evelyn's Kal.*

PEGANUM, in botany, WILD SYRIAN RUE, a genus of the monogynia order, belonging to the dodecandria class of plants; and in the natural method ranking under the 26th order, *Mutifligue*.

PEGASIDES, a name of the Muses, from *PEGASUS*.

(1.) *PEGASUS*, among the poets, a horse imagined to have wings, and fabled to have sprung from the blood of *MENUSA*; being that whereon Bellerophon was fabled to be mounted when he engaged the Chimæra. See *CHIMÆRA*, N° 3. He was also mounted by *PERSEUS* when he destroyed the sea-monster that was to devour *ANDROMEDA*. (*Ovid*.) The opening of the fountain *Hippocrene* on mount *Helicon* is ascribed to a blow of *Pegasus's* hoof. He was feigned to have flown away to heaven, where he became a constellation. Hence

(2.) *PEGASUS*, in astronomy, the name of a constellation of the northern hemisphere, in form of a flying horse. See *ASTRONOMY*, § 348.

PEGAU, a town of Upper Saxony, in Leipzig, on the Elster; 10 miles SSW. of Leipzig, and 38 W. of Dresden.

PEGERSK, a town of Russia, in Pskov.

(1.) *PEGNA*, or *PEGNA COVA*, a town of Portugal, in Beira; 7½ miles NE. of Coimbra.

(2.) *PEGNA DA FRANCIA*, a town of Spain, in Leon; 24 miles SSE. of C. Rodrigo, and 55 SSW. of Salamanca.

(3.) *PEGNA MACOR*, a town of Portugal, in Beira, on the borders of Spain; with a castle, 3 churches, a convent, an hospital, and about 2300 inhabitants; 10½ miles SW. of Alfayates, 30 NE. of Castel Branca, and 40 NW. of Alcantara. Lon. 6. 32. W. Lat. 39. 59. N.

(4.) *PEGNA MAYOR*, or *MAJOR*, a town of Spain, in Galicia; 12 miles ESE. of Lugo.

PEGNAFIEL, a town of Spain, in Old Castile, at the foot of a mountain; famous for its palace, castle, fortifications, and churches, which are reckoned the best in Spain. It is seated on the Douro, 25 miles SE. of Valladolid. Lon. 4. 6. W. Lat. 41. 41. N.

PEGNAFIRMA, a town of Portugal, on the W. coast, at the mouth of the Mongola; 9 miles S. of Peniche.

PEGNAFLOR, 2 towns of Spain: 1. in Asturias, on the W. bank of the Pravia, 7 miles NW. of Oviedo: 2. in Cordova, on the Guadalquivir, 32 miles SW. of Cordova.

PEGNARANDA, 2 towns of Spain: 1. in Leon, 30 miles SE. of Salamanca: 2. in Old Castile, 18 miles W. of Osma, and 30 SW. of Olmedo. Lon. 4. 8. W. Lat. 40. 59. N.

PEGNITZ, a river of Franconia, which runs into the Rednitz, 4 miles W. of Nuremberg.

PEGNON DE VELKZ, a Spanish fortress of Africa, on the N. coast of Morocco, built in 1508, by Peter of Navarre; taken by the Moors in 1522; and retaken by the Spaniards in 1664. It is 40 miles E. of Gernera, and 68 W. of Melilla.

PEGNONGMECO, a town of Asia, in Burmah, 66 miles SW. of Ava, and 288 ENE. of Arracan.

(1.) *PEGU*, or } a very considerable kingdom

(1.) *PEGUE*, } of Asia, beyond the Ganges. The country properly so called is but about 350 miles long from N. to S. and as much in breadth from E. to W. It is situated on the E. side of the bay of Bengal, nearly opposite to Arica, and to the NE. of the coast of Coromandel. It is bounded on the N. by the kingdoms of Arrakan and Ava; E. by the Upper and Lower Siam; S. by Siam and the sea; and W. by the sea and part of Arrakan.

(2.) *PEGUE*, CLIMATE, SOIL, PRODUCE, AND MINERALS OF. The air of Pegue is very healthy, and presently recovers sick strangers. The soil also is very rich and fertile in corn, rice, fruit, and roots; being enriched by the inundations of the river Pegu, which are almost incredible, extending above 30 leagues beyond its channel. It produces also good timber of several kinds. The country abounds with elephants, buffaloes, goats, hogs, and other animals, particularly game; and deer is so plenty in September and October, that one may be bought for three or four pence; they are very fleshy, but have no fat. There is store of good poultry; the cocks are vastly large, and the hens very beautiful. As for fish, there are many sorts, and well tasted. In Pegu are found mines, not only of gold, iron, tin, and lead, or rather a kind of copper, or mixture of copper and lead, but also of rubies, diamonds, and sapphires. The rubies are the best in the world; but the diamonds are small, and only found in the claws of poultry and pheasants. Besides, only one family has the privilege of selling them; and none dare open the ground to dig for them. The rubies are found in a mountain in the province of Kaban, or Kapekan, between the city of Pegue and the port of Sirian.

(3.) *PEGUE*, GOVERNMENT OF. In the government of this country, despotism prevails in its full extent, and despotism too of the very worst kind; for the inhabitants are under the absolute power of a set of petty tyrants, who are themselves nothing more than slaves to the king of Ava. As they have little or no emolument, except what they can raise by extortion, it is exercised in the most unlimited manner. They take cognizance of all disputes between individuals that come to their ears, without their case being laid before them by either of the parties; and on whatever

side

side the cause is determined, there is a never-failing charge brought in against both, for justice, as they express it; and this price of justice is often three or four times greater than the value of the matter in agitation.

(4.) **PEGUE, HISTORY OF.** The kingdom of Pegue is said to have been founded about 1200 years ago. Its first king was a seaman, concerning whom and his successors we know nothing, till the discovery of the East Indies by the Portuguese in the beginning of the 16th century. In 1518 the throne of Pegue was possessed by Bressagnkan, with whom Anthony Correa, the Portuguese ambassador, concluded a peace, in 1519. This monarch was possessed of a very large and rich empire, nine kingdoms being subject to him, whose revenues amounted to three millions of gold. In 1539 he was murdered. Among other princes who were his tributaries was Para Mandara, king of the Barmas. These people inhabited the high lands called *Pangawirou*, to the N. of Pegue. Their prince was obliged to furnish the king of Pegue with 30,000 Barmas, to labour in his mines and other public works. As the king used often to go and see how his works went forward, and in these journeys took along with him none but his women, the Barmas formed a design of robbing the ladies of their jewels; and the next time the king visited the works, they murdered him, stripped the ladies, and fled to their own country. By this enormity all Pegue was thrown into confusion: but, instead of revenging the death of their king, the people divided everywhere into factions; so that Dacha Rupi, the lawful heir to the crown, was unable to maintain his authority. Of these commotions the king of the Barmas taking the advantage, invaded the country with an army of more than a million of foot, and 5000 elephants; besides a great fleet which he sent down the river Ava towards Pegue, the capital, while he himself marched thither by land. Just at this time Ferdinand de Mirales arrived at Pegue from Goa, with a large galleon richly laden on account of the king of Portugal. As soon as Dacha Rupi heard of his coming, he sent to ask his assistance against the enemy. This he obtained by great presents and promises; and Mirales, setting out in a galliot, joined the king's ships. Had the numbers been nearly equal, the superior skill of Mirales would undoubtedly have gained the victory; but the fleet of the Barmas covered the whole river, while that of Dacha Rupi could scarce be observed. Mirales did every thing that man could do, and even held out alone after the natives had deserted him; but at last, oppressed and overwhelmed with numbers, he was killed, with all his men. Thus Para Mandara became master of all Pegu; after which he attacked the tributary kingdoms. In 1544 he besieged Martavan, the capital of a kingdom of the same name, then very great and flourishing. The land forces which he brought against it consisted of 700,000 men, while by sea he attacked it with a fleet of 1700 sail, 100 of which were large galleys, and in them 700 Portuguese, commanded by John Cayero, a valiant and experienced officer. The siege, however, continued 7 months, during which time the Barmas lost 120,000 men; but at last the besieged king, finding himself straitened for want of provi-

sions, and unable to withstand so great a power, offered terms of capitulation. The besiegers would admit of no terms; upon which the distressed king applied to the Portuguese, and offered very advantageous terms, which Cayero would have accepted, but his officers would not permit him. The unhappy king of Martavan had now no other resource but to set fire to the city, make a sally, and die honourably with the few men he had with him; but even here he was disappointed; for by the desertion of 4000 of his troops, the enemy were apprised of his design, and prevented it. Thus betrayed, he capitulated with the Barma king for his own life and the lives of his wife and children, with leave to end his days in retirement. All this was readily granted, but without any intention of performance. The city was plundered and burnt, by which above 60,000 persons perished, while as many more were carried into slavery: 6000 cannon were found in the place, 100,000 quintals of pepper, and an equal quantity of other spices. The day after this destruction, 21 gibbets were erected on an hill adjoining to the city; on which the queen, her children, and ladies, were executed, by hanging them up alive by the feet. The king, with 50 of his chief lords, was cast into the sea, with stones about their necks. This monstrous cruelty so provoked the tyrant's soldiers, that they mutinied, but he found means to pacify them; after which he proceeded to besiege Prom, the capital of another kingdom. Here he increased his army to 900,000 men. The queen, by whom it was governed, offered to submit to be his vassal; but nothing would satisfy the Barma monarch less than her surrender at discretion, and putting all her treasure into his hands. This she, who knew his perfidy, refused to do; on which the city was fiercely assaulted; but greatly to the disadvantage of the Barmas, who lost near 100,000 men. At last, however, it was betrayed to Mandara, who behaved with his usual cruelty: 2000 children were slain; the queen was stripped naked, publicly whipped, and then tortured, till she died; the young king was tied to her dead body, and both together cast into a river, as were also 300 other people of quality. While the tyrant was employed in fortifying the city, the prince of Ava had sailed down the river Queytor with 400 rowing vessels, having 30,000 soldiers on board; but hearing of the queen's disaster, he stopped at Meletay, a strong fortress about 12 leagues north of Prom, where he waited to be joined by his father, the king of Ava, with 80,000 men. On this news Mandara sent his foster-brother Chaumigrem along the river side with 200,000 men, while he himself followed with 100,000 more. The prince in this emergency burnt his barks, forming a vanguard of the mariners; and, putting his small army in the best position he could, expected the enemy. A most desperate engagement ensued, in which only 800 of the prince's army were left, and 115,000 out of 200,000 Barmas who opposed him were killed. The 800 Avans retired into the fort: but Mandara coming up soon after, attacked the fortress for 7 days, when the 800, finding themselves unable to hold out, rushed out in a dark and rainy night, to sell their lives at as dear a rate as possible. This last effort was so extremely violent, that

that they broke through the enemy's troops in several places, and even pressed so hard on the king himself that he was forced to jump into the river. However, they were at last all cut off, after they had destroyed 12,000 of their enemies. Mandara having thus become master of the fort, commanded it to be immediately repaired, and failed up the river to the port of Ava, about a league from the capital, where he burnt between 2000 and 3000 vessels, and lost in the enterprise about 8000 men. The city itself he did not think proper to invest, as it had been newly fortified, was defended by a numerous garrison, and an army of 80,000 men was advancing to its relief. The king also, apprehensive of Mandara's power, had implored the protection of the emperor of Siam; offering to become his tributary if he would assist him with his forces in recovering the city of Prom. To this the emperor readily assented; on which Mandara sent ambassadors to the sovereign of a large territory adjacent, requesting him to divert the emperor from his purpose. On the ambassadors return, it appeared that the treaty had taken effect; but as the season was not yet arrived for invading Ava, Chaumigrem was sent with 150,000 men to reduce Sebadi, the capital of a small kingdom about 130 leagues NE. of Pegue. He, however, failed in his attempt; and afterwards was surprised by the enemy, and put to flight. In the mean time, the empire of Siam fell into great distractions; the king, together with the heir to the crown, were murdered by the queen, who had fallen in love with an officer, whom she married after her husband's death. However, both of them were soon after killed at an entertainment; and the crown was given to a natural brother of the late king, but a coward and a tyrant. On this Mandara collected an army of 800,000 men, with 20,000 elephants. In this army were 1000 Portuguese, commanded by one James Suarez, who had a pension of 200,000 ducats a-year from the king of Pegu, with the title of his brother, and governor of the kingdom. With this formidable army he set out in April 1548. His first achievement was the taking of a fortress on the borders of the enemy's country; before which, being several times repulsed, and having lost 3000 of his men, he revenged himself by putting all the women to the sword. He next besieged the capital; but though the siege continued 5 months, the assailants were constantly repulsed with great loss. A mound of earth was then raised, on which were placed 40 pieces of cannon, ready to batter it anew, when, in October, advice was received of a rebellion having broken out in Pegue. The person who headed the rebels was Shoripam Shay, a relation of the former monarch, slain 12 years before. He was a religious person, and esteemed a saint. As he was a preacher, he made a sermon, in which he set forth the tyranny of the Barmas in such a manner, that he was immediately taken out of the pulpit, and proclaimed king by the people, who, as a token of sovereignty, gave him the title of *Shemindoo*. His first act was to cut in pieces 15,000 Barmas, and seize on the treasure; and in three weeks all the strong holds of Pegue fell into his hands. On this news, Mandara immediately raised the siege in which he was engaged, and in 17 days got to Mar-

tavan. Here he was informed that *Shemindoo* had posted 500,000 men in different places, to intercept his passage; and 50,000 of his best troops deserted. After 14 days stay, he departed from Martavan, and met *Shemindoo* at the head of 600,000 men. A desperate engagement followed, in which *Shemindoo* was entirely defeated, with the loss of 300,000 men. Of the Barma troops were slain 60,000; among whom were 280 Portuguese. The morning after this victory, the tyrant marched to the city; the inhabitants of which surrendered, on condition of having their lives and effects spared. The kingdom being thus again brought under his subjection, he proceeded to punish the principal persons concerned in the rebellion: their heads he cut off, and confiscated their estates, which amounted to no less than ten millions of gold. Others say, that he put all without distinction to the sword, excepting 12,000, who took shelter in Suarez's house. The plunder was incredible, Suarez alone getting three millions. All these cruelties, however, did not secure the allegiance of the tyrant's subjects: for in less than three months the city of Martavan revolted; and the governor not only declared for *Shemindoo*, but murdered 2000 Barmas. Mandara then summoned all the lords of the kingdom to meet him with their force, within 15 days, at a place called *Mouchan*, near his capital, whither he himself went with 300 men, to wait their arrival. But in the mean time he received intelligence that the shemin or governor of Zatin, a city of some consequence, had submitted to *Shemindoo*, and also lent him a large sum of gold. The shemin was immediately sent for; but he, suspecting Mandara's design, excused himself by pretending sickness; after which he drew together about 600 men; and having with these privately advanced to the place where the king was, he killed him, with his attendants. The guards in the court being alarmed with the noise, a skirmish ensued with the shemin's men, in which about 800 were slain on both sides, most of them Barmas. The shemin then retreated to a place called *Pontel*; whither the people of the country, hearing of the death of Mandara, who was universally hated, resorted to him. When he had assembled about 5000 men, he returned to seek the troops which the late king had with him; and killed all he found dispersed in several places. With the Barmas were slain 80 out of 300 Portuguese. The remainder surrendered, with Suarez their leader, and were spared, on condition of their remaining in the service of the shemin. The shemin, now finding his forces daily increase, assumed the title of king; and, to render himself the more popular, gave out that he would totally exterminate the Barmas. But one of those who were with Mandara, when he was murdered, escaped the general slaughter, and, swimming over the river, informed Chaumigrem of the king's death. He had with him 180,000 men, all natives of Pegu, excepting 30,000 Barmas. Pretending that he had received orders to put garrisons into several places, Chaumigrem dispatched all the natives into different parts; and thus got rid of those whom he had most cause to fear. He then turned back upon the capital; seized the king's treasure, with all the arms and ammunition; set fire to the magazines,

xines, arsenals, palace, some of whose apartments were celled with gold, and 2000 rowing-vessels which were on the river. Then destroying all the artillery, he fled with the 30,000 Barmas to his own country, being pursued in vain by the natives of Pegue. Thus the shemin of Zatan was left in quiet possession of the kingdom; but, by his repeated acts of tyranny and cruelty, he so disgusted his subjects, that many fled to foreign countries, while others went over to Shemindoo. In the mean time, James Suarez, the Portuguese, lost his life, by attempting to ravish a young woman of distinction; the shemin being unable to protect him, and obliged to give him up to the mob, who stoned him to death. The shemin himself did not long survive him; for, being grown intolerable by his oppressions, most of his followers abandoned him, and he was besieged in his capital by Shemindoo with an army of 200,000 men, and soon after slain in a fall; so that Shemindoo now seemed to be fully established on the throne. But in the mean time, Chaumigrem, hearing that Pegu was very ill provided with the means of defence, invaded the kingdom with an army of 300,000 men. Shemindoo met him with three times their number; but his men, being all natives of Pegue, were inferior in strength to the enemy. The consequence was, that Shemindoo was defeated with prodigious slaughter, and Chaumigrem proclaimed king of Pegue. Shortly after, Shemindoo himself was taken; and, having been treated with the utmost cruelty, was beheaded. Chaumigrem was a very great conqueror, but not at all inferior in cruelty to his predecessors. He reduced the empire of Siam and Arrakan, and died in 1583; being succeeded by his son *Pranjinko*, then about 30 years of age. When this prince ascended the throne, the kingdom of Pegu was in its greatest height of grandeur; but by his tyranny and obstinacy, he lost all that his father had gained. He died in 1599, and after his death, the kingdom of Pegu became subject to Arrakan. For some time past, it has been tributary to the more powerful kingdom of Ava; the sovereigns of which country have hitherto been extremely cautious of permitting Europeans to obtain any settlement among them. From the latest accounts, however, we learn, that the present monarch of Pegue, who is also sovereign of Aracan, Ava, Laos, and Siam, has entirely altered the barbarous system of his predecessors; and has turned his attention to population and improvement, rather than to conquest and extension of empire. He desires to conciliate the Peguers by mildness, and has acquired much popularity among them, by causing their ancient capital to be rebuilt. He has also abrogated several penal statutes against them; caused justice to be administered impartially, and no distinction to be made between a Burman and a Peguer, but that the latter is still excluded from public offices of trust and power. In a word, he has given every encouragement to the descendants of the former inhabitants, as well as to new settlers, to return and repeople their deserted city.

(5.) **PEGUE, INHABITANTS, CUSTOMS, MANNERS, &c. OF.** The inhabitants are of an olive, or rather a tawny complexion. The women are branded by some travellers as having shook off all

modesty. The Peguers may be ranked among the most superstitious of all mankind. They maintain and worship crocodiles; and will drink nothing but the waters of the ditches where those monstrous animals harbour, and by whom they are often devoured. They have five principal festivals in the year, called *Japans*, which they celebrate with extraordinary magnificence. In one of them the king and queen make a pilgrimage about 24 leagues from the city, riding on a triumphal car, so richly adorned with jewels, that it may be said they carry about with them the value of a kingdom. This prince is extremely rich; and has in the chapel of his palace idols of inestimable value, some of them being of massy gold and silver, and adorned with all sorts of precious stones. The talapoins, or priests, have no possessions; but such is the respect paid them by the people, that they are never known to want. They preach to them every Monday not to commit murder; to take from no person any thing belonging to him; to do no hurt; to give no offence; to avoid impurity and superstition; but above all, not to worship the devil; but these discourses have no effect in the last respect. The people, attached to manichæism, believe that all good comes from God; that the devil is the author of all the evil that happens to men; and that therefore they ought to worship him, that he may not afflict them. This is a common notion among the Indian idolaters. The inhabitants of Pegue are accused by some authors of being slovenly in their houses, and nasty in their diet, on account of their seasoning their victuals with fish, a composition made of stinking fish, reduced to a consistency like mustard, so nauseous and offensive, that none but themselves can endure the smell of it. Balbi says, he could sooner bear the scent of stinking carrion; and yet with this they season their rice, and other soups, instead of oil or butter. As they have no wheat in this country, their bread is rice made into cakes. Their common drink is water, or a liquor distilled from cocoa-nut water. They are a spirited and warlike people; open, generous, and hospitable; and have neither the indolence nor the jealousy of most other eastern nations. The men here, as in most eastern countries, buy their wives, or pay their parents a dowry for them. They offer their daughters to strangers, and hire them out for a time: some say they hire out their wives in the same manner. These marriages for a time, are well regulated, and often prove very beneficial to the occasional husband. Most of the foreigners who trade hither, marry a wife for the time of their stay. In case of a separation, the father is obliged to take care of the boys, and the mother of the girls. No woman is looked upon the worse, but rather the better, for having had several European husbands: nay we are told, that no person of fashion in Pegu, from the gentleman to the king, will marry a maiden, till some person has had the first night's lodging with her. In Pegue, the inheritance of all land is in the king: he is likewise the heir of all his subjects who die without issue; but in case they have children, two thirds go to them, and the rest to the king.

(6.) **PEGUE, RELIGION OF THE PEOPLE OF.** The religion of the Peguers is the same at bottom with

with that which prevails over the rest of India and Thibet; only varies somewhat in different countries, according to the humour or interest of the priests. They hold the existence of one supreme God, of whom they make no image; but they have many inferior created gods, whose images are set up in the temples for the laity to worship. When a person falls sick, we are told that they generally make a vow to the devil, from whom they believe all evil comes. Then a scaffold is built, and victuals are spread on the top of it to solace Old Nick, and render him propitious. This feast is accompanied with lighted candles and music; and the whole is managed by an undertaker called the *devil's father*.

(7.) **PEGUE, REVENUE OF.** The king of Pegue's revenues arise chiefly from the rent of lands, of which he is the sole proprietor. Another branch of it, are the duties paid for the commodities imported or exported. In a word, he is judged the richest monarch in the world, next to the emperor of China.

(8.) **PEGUE, TRADE OF.** The commodities exported from this country, are gold, silver, rubies, mulk, benjamin, long-pepper, tin, lead, copper; lacka, or gum-lac, whereof they make hard wax; rice-wine; and some sugar-canes, of which they would have plenty, but that the elephants eat them. Under the name of *rubies*, the Peguers comprise topazes, sapphires, amethysts, and other stones; which they distinguish by saying the blue, the violet, and the yellow rubies. The true ruby is red, transparent, or sparkling, inclining near the surface to the violet of the amethyst. Cotton cloths from Bengal and Coromandel, with some striped silks, are best for the Pegue market; and silver of any sort will go off there: for the king, in return for his eight and a half per cent. duty on it, allows the merchants to melt it down, and put what copper alloy they please in it. They wear none of our European commodities in Pegu but hats and ribbons. The gentry will give extravagant prices for fine beaver hats, which they wear without any coats. They are no less fond of ribbons flowered with gold and silver, which they wear round their hats.

(II.) **PEGUS**, the ancient capital of the above empire, was one of the most splendid, large, and populous cities in all Asia, before it was destroyed by the Barmans or Birmans. (See § 4.) It was a quadrangle, each side measuring $1\frac{1}{2}$ miles, and surrounded by a brick wall, and a ditch of 60 yards broad. The wall had bastions 300 yds. asunder; was 25 feet high, and 40 broad at the bottom. The king's palace was built of wood, but like a fort, with walls and ditches; and it was not only gilded all over, but its battlements were covered with plates of solid gold. This fine city was totally destroyed, and every building in it razed, in 1757, except the pagodas. The great pagoda of SHOEMADOO has been since repaired.

(III.) **PEGUE**, the present capital of Pegue, is built on the same plan, and on part of the site of the old city. It is a square, but each side does not measure above half a mile. It is fenced round by a stockade 12 feet high. The principal street runs from E. to W. intersected by two smaller streets at right angles. At each end of it is a gate,

defended by a piece of ordnance, and centinels. The houses are all made of mats, boards, and bamboos; and have earthen pots full of water on their roofs, to extinguish accidental fires. Building with stones or bricks is prohibited, lest the people should fortify the city and throw off the Birman yoke. It has the hills of Martaban on the E. with the *Sitang* winding along the plains; and has a fine prospect of nature, in her rude but picturesque state, for above 40 miles to the NNW. where it is bounded by the *Galadzet* hills. Lon. 96. 42. E. Lat. 18. 5. N.

(IV.) **PAGUE**, a river in the above empire, which rises in the Galadzet hills; which are chiefly remarkable for the noisome effluvia of their atmosphere. It often overflows its banks. It falls into the Ava. near its mouth, in the bay of Bengal.

PEGUERS, the natives of **PEGUE**. (See § 1, 5.) They are also called **TALIENS**.

(1.) **PEGUNNOCK**, a river of New Jersey, which rises in Suffex county, and runs into the **PASSAICK**.

(2.) **PEGUNNOCK**, a town of New Jersey, in Suffex county, between the Pegunnock, and the Rockaway.

PEGUNTUM, in ancient geography, according to Ptolemy, or **PEGUNTIA**, as Piny has it, a town or citadel of Dalmatia, on the Adriatic, opposite to the island Brattia, 5 miles off, and 40 E. of Salona. According to Fortis, a mountain, a large hollow, and submarine springs are seen here.

PE-HING, a town of China, in Chan-tong.

PEHL, a town of Austria, 6 m. W. of Wells.

PE-HO, a town of China, in Chen-fi.

PEI, 2 towns of China: 1. in Kiang-nan, of the 3d rank, 40 miles NW. of Pefu: 2. in Se-tchuen, of the 2d rank, on the Kincha; 720 miles SW. of Peking. Lon. 124. 47. E. Ferro. Lat. 29. 50. N.

PEI-CHAN, a town of China, in Se-tchuen.

PEICHELSTEIN, a town of Germany, in the county of Tyrol; 5 miles SSW. of Reutten.

PEILLAC, a town of France, in the department of the Morbihan; 6 miles E. of Rochfort.

PEILSTAIN, a town of Germany, in Austria; 4 miles S. of Aigen.

PEINA, a town of Lower Saxony, in Hildesheim, on the Fufe, with a fort and garrison. It withstood a siege in 1523. In 1711, it was taken by the elector of Brunswick. It is 15 miles NNE. of Hildesheim, and 21 E. of Hanover.

PEINE, a town of Brunswick, famous for a battle fought near it in 1553, wherein Maurice elector of Saxony, and the margrave of Brandenburg, were both killed. It is 17 miles W. of Brunswick. Lon. 10. 19. E. Lat. 52. 25. N.

PEINE PORT ET DURE, (Lat. *pena fortis et dura*.) signifies a special punishment inflicted on those who, being arraigned of felony, refuse to put themselves on the ordinary trial, but stubbornly stand mute; it is vulgarly called *pressing to death*. See **ARRAIGNMENT**.

PEIPUS, or **TCHUDSKOI**, a large lake of Russia, between Peterburg and Riga; about 64 miles long, and from 8 to 24 broad. It communicates with lake Wertzerwe, and, by the Narova, which issues from it, with the Gulf of Finland. Lon. from 44. 48. to 45. 44. E. Ferro. Lat. 58° to 59. 10. N.

PEIRAH,

PEIRAH, a town of Malacca, on the W. coast, 100 miles NW. of Malacca. Lat. 3. 40 N.

PEIRCE, James, an eminent dissenting minister, was born at Wapping, in London, in 1664, and was educated at Utrecht and Leyden; after which he spent some time at Oxford, for the benefit of the Bodleian library. He then for two years preached the Sunday evenings lecture at the meeting-house in Miles-Lane, London, and then settled at Cambridge. In 1713 he was removed to a congregation at Exeter, where he continued till 1718: when he was ejected for refusing to sign the Calvinistic articles of faith. Upon this a new meeting was opened at Exeter, of which Mr Pierce continued minister till his death, in 1726. He was a man of the strictest virtue, exemplary piety, and great learning. He wrote, 1. *Exercitatio philosophica de Homæria Anaxagorea*. 3. Thirteen pieces on the Controversy between the Church of England and the Dissenters. 3. Ten pieces on the Controversy about the Ejection at Exeter. 4. Six pieces on the Doctrine of the Trinity. 5. A Paraphrase and Notes on the Epistles of St Paul to the Colossians, Philippians, and Hebrews. 6. An Essay in favour of giving the Eucharist to Children. 7. Fourteen Sermons.

PEIRESC, Nicolas Claude Fabri, an eminent antiquarian, born in 1580, was descended from an ancient and noble family, seated originally at Pisa in Italy. At ten years of age, he was sent to Avignon, where he spent five years in the Jesuits college, in the study of the languages. In 1595, he removed to Aix, and entered upon philosophy. In 1596, he was sent to finish his course under the Jesuits at Tournon, where he turned his attention to cosmography. Being recalled by his uncle, in 1597, he returned to Aix, and entered there upon the study of the law. In 1598 he went again to Avignon, to carry on his course of law under one Peter David; who was also well skilled in antiquities. He returned in 1603, to Aix, at the earnest request of his uncle, who resigned to him his senatorial dignity, for which the degree of LL. D. was a necessary qualification. Peiresc. therefore, took that degree, Jan. 18. 1604. In 1618, he was nominated by Lewis XIII. abbot of Sancta Maria Aqueftrienfis. He died the 24th of June 1637, in his 57th year. His works are, 1. *Historia provincie Gallie Narbonensis*; 2. *Nobilium ejusdem provincie familiarum Origines, et separatim Fabricæ*; 3. *Commentarii rerum omnium memoria dignarum sua ætate gestarum*; 4. *Libri de ludicris naturæ operibus*; 5. *Mathematica et astronomica varia*; 6. *Observationes mathematicæ*; 7. *Epistole ad S. P. Urbanum VIII. cardinales Barberinos, &c.*; 8. *Autores antiqui Græci et Latini de ponderibus et mensuris*; 9. *Eulogia et epitaphia*; 10. *Inscriptiones antiquæ et novæ*; 11. *Genealogia domus Austriacæ*; 12. *Catalogus librorum biblioth. reg.*; 13. *Pœmata varia*; 14. *Nunmi Gallici, Saxonici, Britannici, &c.*; 15. *Lingue Orientales, Hebræa, Samaritana, Arabica, Egyptiaca, et Indices librorum harum linguarum*; 16. *Observationes in varios auctores*.

PEISDORF, a town of Bohemia, in Konigging-ratz; 14 miles NE. of Gitschin.

PEISHCHAR, *n. f.* a word used in Bengal for a principal person in a public office.

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PEISHCUSH, *n. f.* another Bengal word for a prefer; also a fine, or a tribute.

PEISHORE, or **PISHOUR**, a city of Indostan, in Cabul, belonging to the K. of Candahar; 50 miles NW. of Attock. Lon. 69. 45. E. Lat. 33. 44. N.

PEISKREITCHAM, or **PYSKOWICE**, a town of Silesia in Oppeln; 30 miles SE. of Oppeln.

PEITZ, a town of Brandenburg near iron mines; 20 miles ESE. of Luben, and 30 SSW. of Frankfort on the Oder.

PEKAN, in zoology. See **MUSTELA**, N° 3.

PEKIN, or } the capital of China, where the

PEKING, } emperor generally resides, it is situated in a very fertile plain, 20 leagues from the great wall. This name, which signifies the northern court, is given to it to distinguish it from the city **NANKING**, or the southern court. The emperor formerly resided in the latter, but the Tartars, a restless and warlike people, obliged this prince to remove his court to the northern provinces, that he might more effectually repel the incursions of those barbarians, by oppoling to them a numerous militia which he generally keeps around his person. It is an exact square, and divided into two parts; namely, that which contains the emperor's palace, which is in the new city, or, as it is called, the Tartar's city, because it is inhabited by Tartars ever since they conquered this empire; the other, called the *Old City*, is inhabited by the Chinese. The circuit of both these together is 52 Chinese lys, each of which contains 240 geometrical paces; being, without the suburbs, full six leagues in circumference, according to the most accurate measurement made by order of the emperor. The population is generally estimated at 2,000,000, but others state it at double that number. Grofier tells us, "that the height and enormous thickness of the walls of the Tartar city excite admiration; 12 horsemen might easily ride abreast upon them; they have spacious towers raised at intervals, a bow-shot distant from one another, and large enough to contain bodies of reserve in case of necessity. The city has 9 gates, which are lofty and well arched. Over them are large pavilion-roofed towers divided into nine stories, each having several apertures or port-holes: the lower story forms a large hall for the use of the soldiers and officers who quit guard, and those appointed to relieve them. Before each gate a space is left of more than 360 feet; this is a kind of place of arms, inclosed by a semicircular wall equal in height and thickness to that surrounding the city. The great road, which ends here, is commanded by a pavilion-roofed tower, like the first, in such manner that, as the cannon of the former can batter the houses of the city, those of the latter can sweep the adjacent country. The streets of Pekin are straight, about 120 feet wide, a full league in length, and bordered with shops. The governor of Pekin, who is a Mantchew Tartar, is styled *Governor of the Nine Gates*. His jurisdiction extends not only over the soldiers, but also over the people in every thing that concerns the police. No police can be more active; and it is surprising to see, among an infinite number of Tartars and Chinese

Chinese mixed together, the greatest tranquillity prevail. The walls are 50 cubits high. The walls of the emperor's palace, including that and the gardens, are about two miles long. "Although (says Grosier) the Chinese architecture has no resemblance to that of Europe, the imperial palace of Peking does not fail to strike beholders by its extent, grandeur, and the regular disposition of its apartments, and by the singular structure of its pavilion-roofs ornamented at each corner with a carved plat-band, the lower extremity of which is turned upwards. These roofs are covered with varnished tiles of so beautiful a yellow colour, that, at a distance, they make as splendid an appearance as if they were gilded. Below the upper roof there is another of equal brilliancy, which hangs sloping from the wall, supported by a great number of beams, daubed over with green varnish, and interspersed with gilt figures. This 2d roof, with the projection of the first, forms a kind of crown to the whole edifice. The palace is a small distance from the S. gate of the Tartars city. The entrance to it is through a spacious court, to which there is a descent by a marble staircase, ornamented with two large copper lions, and a balustrade of white marble. This balustrade runs in the form of a horse-shoe, along the banks of a rivulet, that winds across the palace with a serpentine course, the bridges over which are of marble. At the bottom of this first court arises a facade with three doors: that in the middle is for the emperor only; the mandarins and nobles pass through those on each side. These doors conduct to a 2d court, which is the largest of the palace: it is about 300 feet long, and 50 broad. An immense gallery runs round it, in which are magazines, containing rich effects, which belong to the emperor as his private property; for the public treasure is entrusted to a sovereign tribunal called *Houpou*. The first of these magazines is filled with plate and vessels of different metals; the 2d contains the finest kinds of furs; the 3d, dresses lined with sable, ermine, minever, and foxes skins, which the emperor sometimes gives in presents to his officers; the 4th is the depository of jewels, pieces of curious marble, and pearls filled up in Tartary; the 5th, consisting of two stories, is full of wardrobes and trunks, which contain the silk stuffs used by the emperor and his family; the rest are filled with bows, arrows, and other pieces of armour taken from the enemy or presented by different princes. The royal hall, called *Tai-botien*, or the Hall of the Grand Union, is in this 2d court. It is built upon a terrace about 18 feet in height, incrustured with white marble, and ornamented with balustrades of excellent workmanship. Before this hall all the mandarins range themselves, when they go, on certain days, to renew their homage, and perform those ceremonies that are appointed by the laws of the empire. This hall is almost square, and about 130 feet in length. The ceiling is carved, varnished green, and loaded with gilt dragons. The pillars which support the roof within are six feet in circumference towards the base, and are coated with a kind of mastic varnished red; the floor is partly covered with coarse carpets, after the Turkish manner; but the walls have no kind of ornament,

neither tapestry, lustres, nor paintings. The throne, which is in the middle of the hall, consists of a pretty high alcove, exceedingly neat. It has no inscription but the character *ching*, which the authors of this relation have interpreted by the word *holy*; but it has not always this signification; for it answers sometimes better to the Latin word *eximius*, or the English words *excellent*, *perfect*, *most wise*. Upon the platform opposite to this hall stand large vessels of bronze, in which incense is burnt when any ceremony is performing. There are also chandeliers shaped like birds and painted different colours, as well as the wax-candles that are lighted up in them. This platform is extended towards the north, and has on it two lesser halls; one of them is a rotunda that glitters with varnish, and is lighted by a number of windows. It is here that the emperor changes his dress before or after any ceremony. The other is a saloon, the door of which opens to the north: through this door the emperor must pass, when he goes from his apartment to receive on his throne the homage of the nobility; he is then carried in a chair, by officers dressed in long red robes bordered with silk, and caps ornamented with plumes of feathers. It would be difficult to give an exact description of the interior apartments which properly form the palace of the emperor, and are set apart for the use of his family. Few are permitted to enter them but women and eunuchs." The temples and the towers of this city are so numerous, that it is difficult to count them. Provisions of all kinds are exceeding plentiful, they being, as well as the merchandises, brought from other parts by means of canals cut from the rivers, and always crowded with vessels of different sizes, as well as from the adjacent country. An earthquake which happened here in 1731 buried above 100,000 persons in the ruins of the houses. The famous Observatory, which is partly described in its order, (See OBSERVATORY, N° 9.) stands in a court of a moderate extent, and is built in the form of a square tower, contiguous to the city wall on the inside, and raised 10 or 12 feet above its bulwark. The ascent up to the top is by a very narrow staircase; and on the platform above were placed all the old instruments, which, though but few, took up the whole room, till Father Verbiest introduced his new apparatus, which he disposed in a more convenient order. These are large, well cast and embellished; and were the neatness of the divisions answerable to the work, and the telescopes fastened to them according to the new method, they would be equal to those of Europe; but the Chinese artificers were either too negligent, or incapable of following his directions. The old instruments were, by order of the emperor Kan-hi, set aside as useless and laid in the hall near the tower, where they may be seen through a cross barred window, all covered with rust. In this famed observatory there are 5 mathematicians employed night and day, each in a proper apartment on the top of the tower, to observe all that passes over their heads: one of them is gazing towards the zenith, and the others towards the four points of the compass, that nothing may escape their notice. Their observations extend not only to the motions of the

heaven

heavenly bodies, but to fire, meteors, winds, rain, thunder, hail, storms, and other phenomena of the atmosphere; and these are carefully entered in their journals, and an account of them is brought every morning to the surveyor of the mathematics, and registered in his office." Lon. 116.

41. E. Lat. 39. 54. N.

PELAGIA, a town of Naples, in Otranto; 3 miles NW. of Tarento.

PELAGIANS, a Christian sect who appeared about the 5th, or end of the 4th century. They maintained the following doctrines. 1. That Adam was by nature mortal, and, whether he had sinned or not, would certainly have died. 2. That the consequences of Adam's sin were confined to his own person. 3. That new born infants are in the same situation with Adam before the fall. 4. That the law qualified men for the kingdom of heaven, and was founded upon equal promises with the gospel. 5. That the general resurrection of the dead does not follow in virtue of our Saviour's resurrection. 6. That the grace of God is given according to our merits. 7. That this grace is not granted for the performance of every moral act; the liberty of the will, and information in points of duty, being sufficient, &c. The founder of this sect was

(1.) PELAGIUS, a native of Great Britain; but whether of England, Scotland, or Wales, is uncertain. Dr Henry says, he was born in N. Wales, Nov. 13, 354; and that his real name was *Morgan*, of which Pelagius is a translation. He was educated in the monastery of Banchor, in Wales, of which he became a monk, and afterwards abbot. In the early part of his life, he went over to France, and thence to Rome, where he promulgated opinions different from those of the church. His morals being irreproachable, he gained many disciples; and the heresy made so rapid a progress, that it became necessary for the pope to exert his power. Pelagius, to avoid the danger, passed over to Sicily, attended by his friend and pupil Celestius. In 411 they landed in Africa, continued some time at Hippo, and were present at the famous conference between the Catholics and Donatists, held at Carthage in 411. From thence they travelled to Egypt; and from Egypt, in 415, to Palestine, where they were graciously received by John, Bp. of Jerusalem. In the same year Pelagius was cited to appear before a council of 17 bishops, held at Diospolis. They were satisfied with his creed, and absolved him of heresy. The African bishops, however, being displeased with their proceedings, appealed to the Roman pontiff: he first approved, and afterwards condemned, the opinions of Pelagius, who, with his pupil Celestius, was publicly excommunicated; and all the bishops who refused to subscribe the condemnation of the Pelagian heresy, were immediately deprived. What became of him after this period, is unknown; but it is probable that he retired to Banchor, and died abbot of that monastery. He wrote, 1. *Expositionum in epist. Paulinas*, lib. xiv. 2. *Epistola ad Demetriadem de virginitate*. 3. *Explanationes symboli ad Damasum*. 4. *Epistola ad viduam duc.* 5. *De libero arbitrio*. These and many other fragments are scattered among the works of St Jerome.

They are also collected by Garnerius, and published in Append. op. Mercatoris, p. 373. *Cave*.

(2.) PELAGIUS I. pope of Rome, was born in Rome, and elected pope in 555. He endeavoured to reform the clergy; and when Rome was besieged by the Goths, obtained many concessions from Totila, in favour of the citizens. He died in 560.

(3.) PELAGIUS II. Pope, succeeded Benedict I. in 578. He laboured much to reconcile the bishops of Istria and Venice to the Roman see, but without success, and he opposed John, Patriarch of Constantinople. He died of the plague in 590.

PELAGNISI, an island in the Grecian Archipelago; 8 miles in circuit. Lon. 41. 58. E. Ferro. Lat. 39. 30. N.

PELAGONIA, a division of Macedonia.

PELAGOSA, an island in the Adriatic, near Dalmatia, which, together with several rocks that appear above water near it, are the remains of an ancient volcano. M. Fortis (in his *Travels into Dalmatia*), says, "The lava which forms the substance of this island, is perfectly like the lava of Vesuvius. If a naturalist should land there, and visit on purpose the highest parts of the island perhaps we might then know whether it has been thrown up by a submarine volcano, as the island near Santerini was in our age; or if we ought to believe it the top of some ancient volcanic mountain, of which the roots and sides have been covered by the waters which divided Africa from Spain, forming the straits of Gibraltar; an invasion that no one can doubt of who has examined the bottoms and shores of our sea. The Lissau Fishermen say, that Pelagosa is subject to frequent and violent earthquakes; and the aspect of the island proves, at first sight, that it has suffered many revolutions; for it is rugged, ruinous, and subverted." It is 16 miles SW. of Agosta, and 30 from the Diomedes isles.

PELAIHAH, a Levite, one of the chiefs of those who returned from captivity, and who signed the covenant that Nehemiah renewed with the Lord. *Neb.* viii. 7. x. 10.

PELASGI, } a very ancient people of
PELASGIANS, } Greece, originally of Arcadia, according to Hesiod; so named from PELASGUS, their first king, though others derive the name from Πηλεγος, a storm, on account of their wandering manner of life. (*Strabo*.) They first inhabited ARGOLIS, in Peloponnesus, which from them was called PELASGIA. Thence, about A. C. 1283, they emigrated into *Æmonia*, and were afterwards dispersed into various parts of Greece; particularly Epirus, Crete, Lemnos, Lesbos, and Argos. Some of them settled in Magna Græcia, in Italy: others occupied a third part of Thessaly, hence called PELASGIOTIS. In short, they spread through so many parts of Greece, that the poets gave their name to the Greeks in general, and name the whole country from them. *Homer. Hesiod.*

(1.) PELASGIA, a name given to GREECE, from the PELASGI. (See the last article.)

(2, 3.) PELASGIA, 1. the ancient name of Lesbos; so called from the PELASGI. (*Diodorus Siculus, Pliny*). 2. The ancient name of PELLAS.

U 2 P O N N A S U S ,

RONNESUS, from PELASGUS, a native of the country. *Nicolaus Damascenus. Ephorus.*

(4, 5) PELASGIA was also an ancient name of Epirus and Peloponnesus.

PELASGICUM, the north wall of Athens; so called from the builders, the PELASGI. (*Pausanias. Pliny*). There was an execration pronounced on any that should build houses under this wall; because the Pelasgi, while dwelling there, entered into a conspiracy against the Athenians. *Thucydides.*

PELASGIOTÆ. See PELASGI.

PELASGIOTIS, a third part of Thessaly, situated between Pieria and Macedonia on the N. and W. Thessalonis on the S. and Magnesia on the E. *Strabo. Pliny.*

PELASGUS, in fabulous history, a son of Jupiter and Niobe, who reigned in Sicyon, and from whom his subjects, the PELASGI, derive their name.

PELATÆ, free-born citizens, among the Athenians, who by poverty were reduced to the necessity of serving for wages. During their servitude, they had no vote in the management of public affairs, as having no estate to qualify them; but this restriction was removed, whenever they had released themselves from their servile situation, which they were allowed to do when able to support themselves. While they continued servants, they had also a right to change their masters. They were called sometimes *THELÆ*.

(1.) PELATIAH, son of Hananiah, and father of Elihi, of the tribe of Simeon. He subdued the Amalekites upon the mountain of Seir. 1. Chron. iv. 42.

(2.) PELATIAH, the son of Benaiah, a prince of the Jews, who lived in the time of Zedekiah king of Judah, and opposed the wholesome advice given by Jeremiah, to submit to king Nebuchadnezzar. (See Jerem. xxxviii. 15—20. and Ezek. xi. 1—4.) Ezekiel's vision, while he was a captive in Mesopotamia, against Pelatiah, Jaazaniah, and 23 other princes who joined with him, is recorded in Ezek. xi. 5—13, with the immediate death of Pelatiah, while Ezekiel was delivering his prophecy.

PELE, two ancient towns of Thessaly; the one subject to Eurypylus, the other to Achilles; both extinct. PELEUS was the gentilitious name. *Strabo.*

PELEE, an island of France, in the dep. of the North; 3 miles NE. of Cherbourg.

PELEG, son of Eber, the 5th in descent from Noah, was born in A. M. 1757. He was named *Peleg*, which signifies *division*, because in his time the earth began to be *divided* (Gen. x. 25. xi. 16.) Whether Noah had begun to divide the earth among his descendants, some years before the building of Babel; or Peleg came into the world the same year that Babel was begun, and at the confusion of languages; or whether Eber, by a spirit of prophecy, gave his son the name of *Peleg* before the tower of Babel was begun, is not certain. That which here perplexes the interpreters is, first, that Peleg came into the world not above 100 years after the deluge. But it should seem, that the number of men was not then sufficient for such an undertaking as that of

Babel; ad, Joktan, the brother of Peleg, had already 13 sons at the time of this dispersion, which happened after the confusion of Babel (Gen. x. 26—29.) Peleg being born in the 34th year of Eber (Gen. xi. 16.), it is impossible that Joktan should have had such a number of children at the birth of Peleg. It seems therefore probable, that he was not born at the time of the dispersion. To this may be answered, that Moses has there enumerated the names of the 13 sons of Joktan by way of anticipation, though they were not born till a good while after the confusion at Babel; but as they possessed a very large country, it was proper to take notice of them, among the other descendants of Noah, who divided the provinces of the east among themselves. However this may have been, at the age of 30, Peleg begat Reu; and he died at the age of 239.

PELEGRINO, a promontory on the N. coast of Sicily; 2 miles W. of Palermo; famous for its cavern, church, and relics of St Rosalia, who died in it.

PELENGON, or *Gelengon*, a town of Persia, in Laristan; 66 miles NE. of Sar.

PELETHITES, and CHEKETHITES, men famous in the reign of K. David. They were the most valiant men in the army of that prince, and had the guard of his person. See 2 Sam. xv. 18. xx. 7. *Patrick's Comm. Poole's Annot. and Delany's Hist. of David.*

PELETHRANII, a name given to the LAPITHÆ, either from their town of PELETHRONIUM, or from their leader PELETHRONIUS. To them mankind are indebted for the invention of the bit with which they tamed their horses.

PELETHRONIUM, a town of Thessaly, in a flowery part of mount PELIOS; so named from *Pelios* and *Agros*, *flowery*. (*Nicander*.) Lucan says the Centaurs were natives of that place; to whom Virgil assigns mount Othrys. See CENTAURS. § 3. LAPITHÆ, and LAPITHUS.

PELETHRONIUS, a leader of the Lapithæ.

PELEUS, in fabulous history, a king of Thessaly, son of Æacus and Endeis, the daughter of Chiron. He was the only mortal man who ever married an immortal. He was concerned in the murder of his brother Phocus, and was therefore obliged to leave his father's dominions. He fled to the court of Eurystus the son of Actor, who reigned at Phthia; or, according to Ovid, to Ceyx king of Trachinia. He was purified of his murder by Eurystus, who gave him his daughter Antigone in marriage. As Pelcus and Eurystus went to the chase of the Calydonian boar, the father-in-law was accidentally killed by an arrow, which his son-in-law had aimed at the beast. This obliged him to banish himself from Phthia, and he went to Iolchos, where he was purified of this homicide by Acastus the king of the country. His residence at Iolchos was short: Atydamia, the wife of Acastus, fell in love with him; but when she found him insensible to her passion, she accused him of attempts upon her virtue. The king partly believed the accusation; but not willing to violate the laws of hospitality, by putting him to death, he ordered his officers to conduct him to mount Pelion, and there tie him to a tree, and leave him to the wild beasts. The orders of Acastus

caſus were obeyed; but Jupiter knowing the innocence of his grandſon Peleus, ordered Vulcan to ſet him at liberty. Peleus then aſſembled his friends to puniſh Acaſtus. He took Iolchos, drove the king from his poſſeſſions, and put to death the wicked Aſtydama. On the death of Antigone, Peleus made love to *Thetis*, but the goddeſs fled from him; and the more effectually to evade his purſuit, ſhe aſſumed the ſhape of a bird, a tree, or a tygreſs. Peleus offered a ſacrifice to the gods; and Proteus informed him, that, to obtain *Thetis*, he muſt ſurpriſe her while ſhe was aſleep in her grotto, near the ſhores of Theſſaly. This advice was followed, and *Thetis*, unable to eſcape, at laſt conſented to marry him. Their nuptials were celebrated with extraordinary ſolemnity, all the gods attending and making them valuable preſents. *Ares*, the goddeſs of Diſcord, was the only one who was not invited, and ſhe puniſhed this neglect by throwing an apple into the miſt of the aſſembly, with this inſcription, *Detur pulchriori*. (See *PARIS*, N^o 1.) The celebrated *Achilles* was the fruit of this marriage, whoſe education was early entruſted to his great-grandfather Chiron, and afterwards to *Phoenix*, the ſon of Amytor. (See *ACHILLES*.) His death was the ſource of great grief to Peleus; but *Thetis*, to comfort her husband, promiſed him immortality, and ordered him to retire into the grotto of the iſland of Leuce, where he ſhould ſee and converſe with the manes of his ſon. Peleus had a daughter called *Polydora*, by Antigone.

PELEW ISLANDS, a cluſter of ſmall iſlands, ſituated between lat. 5° and 9° N. and lon. 13° and 136° E. The natives are all of a deep copper colour, going perfectly naked. They are of a middling ſtature, very ſtraight, muſcular, and well formed; but their legs, from a little above their ancles to the middle of their thighs are tattooed to very thick, as to appear dyed of a far deeper colour than the reſt of their ſkin. Their hair is of a fine black, long, and rolled up behind, in a ſimple manner, cloſe to the back of their heads, which appear both neat and becoming; but few of them have beards, it being the general cuſtom to pluck them out by the roots. The iſland Cooroora, of which Pelew is the capital, produces plantains, bananas, Seville oranges and lemons, but neither of them in any conſiderable quantity. None of the iſlands which the Engliſh viſited had any kind of grain. As to birds, they had plenty of common cocks and hens, which, though not domeſticated, kept running about near their houſes and plantations; and what appears extremely ſingular is, that the natives had never made any uſe of them, till our people told them they were excellent eating. Pigeons they account a great dainty; but none but thoſe of a certain dignity were permitted to eat of them. The country is very mountainous; but the valleys are extenſive and beautiful, affording many delightful proſpects. The houſes are raiſed about 3 feet from the ground, upon ſtones which appear as if hewn from the quarry. The interior part of them is without any diviſion, the whole forming one great room, which riſes in a ridge like our barns, the outſide being ſtatched thick and cloſe with bamboos or palm

leaves. All their implements, utenſils, weapons of war, and canoes, are much of the ſame kind with theſe in the South Sea iſlands. In their marriages they allow a plurality of wives, though in general not more than two.

• *PELF*. *n. f.* [In low Latin, *pelſra*, not known.] whence derived; *peuſſe*, in Norman, is *frippery*.] Money; riches.—

The thought of this doth paſs all worldly *peſf*. *Sidney.*

I read thee, raſh and heedleſs of thyſelf,

To trouble my ſtill ſeat and heaps of precious *peſf*. *Spencer.*

Not provident of *peſf* as many iſlands are.

Drayton.

Immortal gods, I crave no *peſf*;

I pray for no man but myſelf.

Shak.

He called his money in;

But the prevailing love of *peſf*

Soon ſplit him on the former ſide:

He put it out again.

Dryden's Horace.

To the poor if he refus'd his *peſf*,

He us'd them full as kindly as himſelf. *Swift.*

(1.) **PELHAM**, a townſhip of Maſſachuſſetts, in Hampſhire county, 8½ miles W. of Boſton. It had 1040 citizens in 1795.

(2.) **PELHAM**, a townſhip of New Hampſhire, in Rockingham county, on the S. ſtate line, on the banks of Beaver river, 36 miles N. of Boſton. It had 791 citizens in 1795.

(3.) **PELHAM**, a townſhip of New York, in W. Cheſter county; containing 199 citizens, and 27 electors in 1795.

PELIADÆS, the daughters of **PELIAS** were Alceſtis, Piſdice, Pelopea, and Hippothoe, to whom Hyginus adds Meduſa. Their mother's name was Anaxibia, the daughter of Bias and Philomache, the daughter of Amphion. After their parricide, (See **PELIAS**,) the Peliades fled to the court of Admetus, where Acaſtus, the ſon-in-law of Pelias, purſued them, and took their protector priſoner. The Peliades died, and were buried in Arcadia.

PELIAS, in fabulous hiſtory, the twin-brother of **NELEUS**, was ſon of Neptune by Tyro, daughter of Salmoneus. Their birth was concealed by their mother, who wiſhed their father to be ignorant of her incontinence. They were expoſed in the woods, but were preſerved by ſhepherds; and Pelias received his name from a ſpot of the colour of lead in his face. Some time after Tyro married Cretheus, ſon of Æolus, king of Iolchos, and became mother of three children, of whom Æſon was the eldeſt. Pelias viſited his mother, and was received in her family; and after the death of Cretheus, he unjuſtly ſeized the kingdom, which belonged to the children of Tyro by Cretheus. To ſtrengthen himſelf in his uſurpation, Pelias conſulted the oracle; and when he was told to beware of one of the descendants of Æolus, who ſhould come to his court with one foot ſhod and the other bare, he privately removed the ſon of Æſon, and declared that he was dead. Theſe precautions proved vain. JASON, the ſon of Æſon, who had been educated by Chiron, returned to Iolchos, when come to years of maturity; and having loſt one of his ſhoes in croſſing the Anaurus or the Evenus, Pelias perceived that this was the perſon whom he had ſo much dreaded. He was

was unwilling to act with violence to a stranger, who had excited the admiration of the people. But when Jason arrived at his place with his friends, and boldly demanded the kingdom, Pelias said, that he would voluntarily resign the crown to him, if he would go to Colchis to avenge the death of Phryxus, the son of Athamas, whom Æetes had cruelly murdered; adding, that the expedition would be attended with the greatest glory, and that nothing but the infirmities of age had prevented himself from punishing the assassin. This patriotic proposal was accepted by the young hero, and his intended expedition was made known all over Greece: (See ARGONAUTS, JASON, and MEDEA.) According to Ovid, Æson was still living when the Argonauts returned, and was restored to youth by the magic of Medea. This change in the vigour and the constitution of Æson astonished all the inhabitants of Iolchos; and the daughters of Pelias, expressed their desire to see their father's infirmities vanish by the same powerful magic. Medea, who wished to avenge the injuries which her husband Jason had received from Pelias, raised the desires of the Peliades, by cutting an old ram to pieces, and boiling the flesh in a cauldron, and then turning it into a fine young lamb. After they had seen this successful experiment, the Peliades cut their father's body to pieces, after they had drawn all the blood from his veins, on the assurance that Medea would replenish them by her wonderful power. The limbs were immediately put into a cauldron of boiling water; but Medea suffered the flesh to be totally consumed, and refused to give the promised assistance, and the bones of Pelias did not even receive a burial.

(1.) * PELICAN. *n. f.* [*pelicanus*, low Lat. *pellican*, Fr.] There are two sorts of *pelicans*; one lives upon water and feeds upon fish; the other keeps in deserts, and feeds upon serpents and other reptiles: the *pelican* has a peculiar tenderness for its young; it generally places its nest upon a craggy rock: the *pelican* is supposed to admit its young to suck blood from its breast. *Calmet.*—

'Twas this flesh begot those *pelican* daughters.
Shak.

—The *pelican* hath a beak broad and flat, like the slice of apothecaries. *Hakewill on Prov.*

(1.) PELICAN, in ornithology. See PELICANUS.

(3.) PELICAN, in chemistry, is a glass alembic consisting of one piece. It has a tubulated capital, from which two opposite and crooked beaks pass out, and enter again at the belly of the cucurbit. This vessel has been contrived for a continual distillation and cobobation, which chemists call *circulation*. The volatile parts of substances put into this vessel rise into the capital, and are obliged to return through the crooked beaks into the cucurbit; and this without interruption, or luting and unluting the vessels. Although the *pelican* seems to be a very convenient instrument, it is now little used; either because the modern chemists have not so much patience as the ancient chemists had for making long experiments; or because they find that two matreflles, the mouth of one of which is inserted in the mouth of the other produces the same effect.

(1—3.) PELICAN ISLAND, 3 small islands: viz. 1 on the NE. coast of Antigua; Lon. 61. 24. W. Lat. 17. 14. N. 2. on the SW. coast of Antigua: Lon. 61. 35. W. Lat. 17. 10. N. 3. near the SW. coast of W. Florida. Lon. 88. 6. W. Lat. 30. 14. N.

(4.) PELICAN ISLANDS, a cluster of islands, near the coast of W. Florida. Lon. 88. 55. W. Lat. 29. 48. N.

(5.) PELICAN ISLANDS, a cluster of islands on the S. coast of Jamaica, W. of Port-Royal harbour.

(1.) PELICAN KEY, GREAT, an island near the S. coast of Jamaica. Lon. 76. 48. W. Lat. 17. 49. N.

(2.) PELICAN KEY, LITTLE, an island near the S. coast of Jamaica, lying N. of Great Pelican Key.

PELICANUS, in ornithology, a genus belonging to the order of anseres. The bill is straight, without teeth, and crooked at the point; the face is naked, and the feet are palmated. Mr Latham enumerates no less than 30 different species of this genus besides varieties. The most remarkable are these;

1. PELICANUS AQUILUS, or the MAN-OF-WAR BIRD, is in the body about the size of a large fowl; in length 3 feet, and in breadth 14. The bill is slender, 5 inches long, and much curved at the point; the colour is dusky; from the base a reddish dark-coloured skin spreads on each side of the head, taking in the eyes: from the under mandible hangs a large membranaceous bag attached some way down the throat, as in the *pelican*, and applied to the same uses; the colour of this is a fine deep red, sprinkled on the sides with a few scattered feathers: the whole plumage is brownish black, except the wing coverts, which have a rufous tinge: the tail is long, and much forked; the outer feathers are 18 inches or more in length; the middle ones from seven to eight: the legs are small, all the toes are webbed together, and the webs are deeply indented; the colour of them is dusky red. The female differs in wanting the membranaceous pouch under the chin; and in having the belly white: in other things is like the male. The frigate *pelican*, or man-of-war bird, is chiefly, if not wholly, met with between the tropics, and ever out at sea, being only seen on the wing. It is usual with other birds, when fatigued with flying, to rest on the surface of the water; but nature, from the exceeding length of wing ordained to this, has made the rising therefrom utterly impossible; though perhaps this is no defect, as it scarcely seems to require much rest; as from the length of wing, and its apparent easy gliding motion (much like that of the kite), it appears capable of sustaining very long flights; for it is often seen above 100, and sometimes above 200, leagues from land. It also attacks gulls and other birds which have caught a fish, when it obliges them to disgorge it, and then seizes it before it falls into the water. They make nests on trees, and on the rocks. They lay one or two eggs of a flesh-colour marked with crimson spots. The young birds are covered with greyish white down; the legs are of the same colour, and the bill is white. There is a variety of this species, which is less, measuring only

only two feet nine inches in length; the extent from wing to wing is five feet and a half. The bill is five inches long, and red; the base of it, and bare space round the eye, are of the same colour; the nostrils are sufficiently apparent, and appear near the base; the shape of the bill is as in the larger one: the head, hind part of the neck, and upper parts of the body and wings, are ferruginous brown; the throat, fore part of the neck, and breast, are white; the tail is greatly forked as in the other; the legs are of a dirty yellow. Some suppose that the greater and lesser frigates are the same birds, in different periods of age.

2. *PELICANUS BASSANUS*, the GANNET, or SOLAN GOOSE, weighs seven pounds; the length is three feet one inch; the breadth six feet two inches. The bill is six inches long, straight almost to the point, where it inclines down; and the sides are irregularly jagged, that it may hold its prey with more security: about an inch from the base of the upper mandible is a sharp process pointing forward; it has no nostrils; but in their place a long furrow, that reaches almost to the end of the bill: the whole is of a dirty white, tinged with ash-colour. The tongue is very small, and placed low in the mouth; a naked skin of a fine blue surrounds the eyes, which are of a pale yellow, and are full of vivacity: this bird is remarkable for the quickness of its sight. Martin tells us, that *solan* is derived from an Irish word expressive of that quality. From the corner of the mouth is a narrow slip of black bare skin, that extends to the hind part of the head; beneath the chin is another, that, like the pouch of the pelican, is dilatible, and of size sufficient to contain 6 entire herrings; which in the breeding season it carries at once to its mate or young. The young birds, during the first year, differ greatly in colour from the old ones; being of a dusky hue, speckled with numerous triangular white spots; and at that time resemble in colours the speckled diver. Each bird, if left undisturbed, would only lay one egg in the year; but if that be taken away, they will lay another; if that is also taken, then a third; but never more than that season. Their egg is white, and rather less than that of the common goose; the nest is large, and formed of any thing the bird finds floating on the water, such as grass, sea-plants, shavings, &c. These birds frequent the Isle of Ailsa, in the Frith of Clyde; the rocks adjacent to St Kilda; the Stalks of Soulliskerry, near the Orkneys; the Skelig Isles, off the coasts of Kerry, Ireland; and the Bass Isle, in the Frith of Forth: the multitudes that inhabit these places are prodigious. These birds are well known on most of the coasts of England, but not by the name of the *Solan geese*. In Cornwall and in Ireland they are called *gannets*; by the Welsh, *gan*. We are uncertain whether the gannet breeds in any other parts of Europe besides our own islands; except, as Mr Ray suspects, the fula (described in Clusius's *Exotica*, which breeds in Feroc Isles) be the same bird.

3. *PELICANUS CARBO*, the CORYORANT, sometimes exceeds 7 lb. in weight; the length 3 feet 4; the extent 4 feet 2; the bill dusky, 5 inches long, destitute of nostrils; the base of the lower mandible is covered with a naked yellow skin,

that extends under the chin, and forms a sort of pouch; a loose skin of the same colour reaches from the upper mandible round the eyes and angles of the mouth; the head and neck are of a sooty blackness, but under the chin of the male the feathers are white; and the head in that sex is adorned with a short, loose, pendant crest: in some, both the crest and hind part of the head are streaked with white. The coverts of the wings, the scapulars, and the back, are of a deep green, edged with black, and glossed with blue; the quill-feathers and tail dusky; the legs are short, strong, and black; the middle claw serrated on the inside; the irides are of a light ash-colour. These birds occupy the highest parts of the cliffs that impend over the sea: they make their nests of sticks, sea-tang, grass, &c. and lay 6 or 7 white eggs of an oblong form. In winter they disperse along the shores, and visit the fresh waters, where they make great havoc among the fish. They are remarkably voracious, having a most sudden digestion, promoted by the vast quantity of small worms that fill their intestines. The coryorant has the rankest and most disagreeable smell of any bird, even when alive. Its form is disagreeable; its voice hoarse and croaking, and its qualities base. The Chinese make great use of these birds, or a congenerous sort, in fishing; not for amusement, but profit. See CHINESE, § 6.

4. *PELICANUS GRACULUS*, the SHAG, called in the north of England the *crane*, is much inferior in size to the coryorant: the length is 27 inches; the breadth 3 feet six; the weight $3\frac{1}{2}$ lb. The bill is four inches long, and more slender than that of the preceding: the head is adorned with a crest two inches long, pointing backward; the whole plumage of the upper part of this bird is of a fine and very shining green; the edge of the feathers a purplish black; but the lower part of the back, the head, and neck, wholly green; the belly is dusky; the tail of a dusky hue, tinged with green; the legs are black, and like those of the coryorant. Both these kinds agree in their manners, and breed in the same places; and what is very strange in web-footed birds, will perch and build in trees: both swim with their head quite erect, and are very difficult to be shot; for, like the grebes and divers, as soon as they see the flash of the gun, they pop under water, and never rise but at a considerable distance.

5. *PELICANUS ONOCROTALUS*, or the *pelican of Asia*, Africa, and America; though Linnaeus thinks that the pelican of America may be a distinct variety. This creature, in Africa, is much larger in the body than a swan, and somewhat of the same shape and colour. Its four toes are all webbed together; and its neck in some measure resembles that of a swan: but the singularity, in which it differs from all other birds, is in the bill and the great pouch underneath. This enormous bill is 15 inches from the point to the opening of the mouth, which is a good way back behind the eyes. See Plate 270. At the base the bill is somewhat greenish, but varies towards the end, where it hooks downwards. The under chap is still more extraordinary; for to the lower edges of it hang a bag, reaching the whole length of the bill to the neck,

neck, which is said to be capable of containing 15 quarts of water. This bag the bird has a power of wrinkling up into the hollow of the under chap; but by opening the bill, and putting one's hand down into the bag, it may be distended at pleasure. The skin of which it is formed will then be seen of a bluish ash colour, with many fibres and veins running over its surface. It is not covered with feathers, but with a short downy substance as smooth and as soft as fatten, and is attached all along to the under edges of the chap, is fixed backward to the neck of the bird by proper ligaments, and reaches near half way down. When this bag is empty, it is not seen; but when the bird has fished with success, it is then incredible to what an extent it is often seen dilated. For the first thing the pelican does in fishing is to fill up the bag; and then it returns to digest its burden at leisure. When the bill is opened to its widest extent, a person may run his head into the bird's mouth, and conceal it in his monstrous pouch, thus adapted for very singular purposes. Tertre affirms, that it will hide as many fish as will serve 60 hungry men for a meal. This pelican was once also known in Europe, particularly in Russia; but it seems to have deserted our coasts. This is the bird of which so many fabulous accounts have been propagated; such as its feeding its young with its own blood, and its carrying a provision of water for them in its great reservoir in the desert. But the absurdity of the first account, answers itself; and as for the latter, the pelican uses its bag for very different purposes than that of filling it with water. Clavigero, in his History of Mexico, says that "there are two species, or rather varieties, of this bird in Mexico; the one having a smooth bill, the other a notched one." The pelican, says Labat, has strong wings, furnished with thick plumage of an ash-colour, as are the rest of the feathers over the whole body. Its eyes are very small, when compared with the size of its head; there is a sadness in its countenance, and its whole air is melancholy. It is slow of flight; and when it rises to fly, performs it with difficulty and labour; but when it perceives a fish sufficiently near the surface, it darts down upon it with the swiftness of an arrow, seizes it with unerring certainty, and stores it up in the pouch. It reposes for the night, and often spends a great part of the day, sitting, in dismal solemnity, and, as it would seem, half asleep, on a tree. The same indolence attends them even in preparing for incubation, and defending their young when excluded. The native Americans kill vast numbers; not to eat, for they are not fit even for the banquet of a savage, but to convert their large bags into purses and tobacco pouches. Some authors say the pelican lives 60 or 70 years. Capt. Keeling, in his voyage to Sierra Leone, says the pelicans there are as large as swans, of a white colour, with exceeding long bills; and M. Thevenot, in his Travels to the Levant, observes that the pelicans about some part of the Nile near the Red Sea swim by the bank side like geese, in such great numbers that they cannot be counted. F. Morrolla, in his voyage to Congo, says pelicans are often met with in the road to Singa, and are all over black, except on their breast, which is of a flesh

colour like the neck of a turkey. He adds, that father Francis de Pavia informed him, that on his journey to Singia he observed certain large white birds, with long beaks, necks, and feet, which, whenever they heard the sound of an instrument, began immediately to dance and leap about the rivers, where they always hide, and whereof they were great lovers: this, he said, he took a great pleasure to contemplate, and continued often upon the banks of the rivers to observe.

6. PELICANUS PUSSUS, or the great booby, called by Linnæus *Pelicanus Bassani pustus*, frequents the rivers and sea coasts of Florida, pursuing and devouring fishes. Mr. Catesby informs us, that he has several times found them disabled, and sometimes dead, on the shore; whence he thinks that they meet with sharks or other voracious fishes, which destroy them. The bird is about the size of a goose; the head and neck remarkably prominent; the back of a brown colour; the belly dusky white; the feet black, and shaped like those of a corvorant; the head elegantly spotted with white; the wings extend six feet when spread. Both this species and the SULA have a joint in the upper mandible of the bill, by which they can raise it considerably from the lower one without opening the mouth.

7. PELICANUS SULA, the booby, is somewhat less than a goose; the basis of the bill yellow, and of bare feathers; the eyes of a light grey colour; the lower part of the bill of a light brown. The colours of the body are brown and white; but varied so in different individuals, that they cannot be described by them. Their wings are very long; their legs and feet pale yellow, shaped like those of corvorants. They frequent the Bahama islands, where they breed all months in the year, laying 1, 2, or 3 eggs, on the bare rock. While young, they are covered with a white down, and continue so till they are almost ready to fly. They feed on fish, but have a very troublesome enemy in the man-of-war bird, which lives on the spoils obtained from other sea-birds, particularly the booby. Such readers as desire further information respecting this numerous genus, may consult *Edward's History of Birds; Natural History of Jamaica; Mem. de l'Academie Royale des Sciences, depuis 1666 jusqu'à 1699*, tom. 3. p. 186; *Willoughby's Pennant's British and Arctic Zoology*; and *Latham's Synopsis of Birds*; the last of which is the fullest and most scientific of any we have yet seen.

PELICARO, a town of Naples in Basilicata; 10 miles ENE. of Turf.

PELIDES, a patronymic of Achilles and Pyrrhus; as, descended of Pelæus.

PELIGNI, an ancient nation of Italy, who dwelt near the Sabines and the Marfi. Their chief towns were Curtinium and Sulmo. *Liv.* viii. 6. 29. *Strabo.* 5.

PELIKANY, a town of Lithuania, in Wilna; 16 miles SSW. of Braslaw.

PELIM, a town, lake, and river of Russia, in Tobolsk. The river runs into the lake, which is 36 miles in circumference. *Lon.* 81. 36. E. *Ferro.* Lat. 59. 20. N.

PELING, an island of Asia, in the Yellow Sea, near the coast of Corea; 10 miles long and 4 broad. *Lon.* 143. 14. E. *Ferro.* Lat. 38. 24. N.

PELINNA,

PELINNA, or } an ancient town of Macedo-
PELINNÆUM. } *Strabo*, xiv. *Liv.* xxxvi.
10. and 14.

PELION, or } a mountain of Thessaly, near Of-
PELIOS, } fa, hanging over the Sinus Pel-
lagicus, or Pegasus; its top covered with pines,
the sides with oaks, and wild ash. (*Diod. Sic.*
Mela. Virg. Hor. Ovid. Sen. V. Flac.) From this
mountain was cut the spear of Achilles, called *pe-
lias*, which none but himself could wield. (*Homer.*)
Dicaearchus, Aristotle's scholar, found this moun-
tain 1250 paces higher than any other of Thessaly.
(*Pliny.*) *Pelios*, and *Peliacus*, the epithets. *Cic. Cat.*
tul.

PELIOU, a town of China in Quang-fi.

PELISE, a river of the French empire, in the
ci-devant Piedmontese; which rises in Mount La
Croix, passes by Lucerne; and runs into the Chi-
fone, one mile S. of Vigone.

PELISSA, a town and county of Lower Hun-
gary. The town is seated near the Danube; 15
miles N. of Buda. Lon. 18. 20. E. Lat. 47. 40. N.

PELISSANE, a town of France, in the dep.
of the Mouths of the Rhone; 3 miles E. of Salone,
and 15 WNW. of Aix.

PELISSON. See **PELLISON**.

PELIUM, a town of Macedonia. *Liv.* 31. 40.

PELL, John, D. D. an eminent mathematician,
of an ancient family in Lincolnshire, born at South-
wyke in Suffex, March, 1, 1610, and educated at
Cambridge, where he took his degree of M. A. in
1630. In 1629, he drew up the *Description and
Use of the Quadrant*. In 1643, he was chosen Prof.
of mathematics at Amsterdam. In 1646, the Pr.
of Orange appointed him professor of that at Bre-
da. He returned to England in 1652; and, in
1654, was sent by Oliver Cromwell, as agent to
the protestant Swiss Cantons. He resided at Zu-
rich 4 years, with the title of *Ablegatus*, and re-
turned 23d June 1658. After the restoration,
which he contributed to promote, he entered into
orders; was created D. D. ordained deacon in
1661, and rector of Laingdon, in Essex, in 1663.
He published a work on Algebra, and on the 10th
of Euclid, with other tracts. He died at London,
Dec. 12, 1685.

(1.) **PELLA**, in ancient geography, a town of
Macedonia on the confines of Emathia. (*Ptolemy.*)
Herodotus allots it to Bottia, a maritime district
on the Sinus Thermaicus. It was the royal resi-
dence, situated on an eminence, on the SW. en-
compassed with unpassable marshes summer and
winter; in which, next the town, a citadel like
an island rose, placed on a bank or dam, a pro-
digious work, both supporting the wall and se-
curing it from hurt by the circumfluent water.
At a distance, it seemed close to the town, but was
separated from it by the Ludias, running by the
walls, and joined to it by a bridge; 120 stadia
from the sea, the Ludias being so far navigable.
(*Liv. Strab.*) *Mela* calls it **PELLE**. It was the
birth-place of Philip, who enlarged it; and after-
wards of Alexander; (*Strabo Mela*) and continued
to be the royal residence down to Perseus. (*Livy.*)
It is called *Pella Colonia*, by Pliny, and *Colonia
Julia Augusta* upon coin. It afterwards declined,
and had but few and mean inhabitants. (*Lucian.*)
It is now called Πανάσια, *Palatisia*, i. e. the Little

Palace. (*Holhemius.*) *Pellæus*, the gentilitious name
and epithet. *Lucian*, *Juv. Mart.*

(2.) **PELLA**, a town of the Decapolis on the
other side the Jordan; abounding in water. (*Poly.
Plin.*) built by the Macedonians, (*Strabo*;) or by
Seleucus, (*Eusebius*;) anciently called *Butis*,
(*Stephanus*;) and *APAMEA*, (*Strabo*;) 35 m. NE.
of Gerafa. (*Ptol.*) Thither the Christians, just
before the siege of Jerusalem by Titus, were di-
vinely admonished to fly. (*Eusebius*.) It was the
utmost boundary of the Peræa, or Transjordan
country, on the N. *Josephus*.

(3.) **PELLA**, in modern geography, a town of
Russia, at the conflux of the Neva and Tolua: 20
miles SE. of Peterburg.

PELLÆUS, a title of Alexander.

PELLANE, a town of Laconia. *Paus.* iii. 21.

PELLE. See **PELLA**, N° 1.

PELLEGRIN, Simon Joseph, a learned French
writer, born at Versailles, in 1663. He entered
into the order of Servites; and wrote on various
subjects, some scriptural, others dramatic, poeti-
cal, &c. In 1704, he obtained the Academy's
prize, for his Epistle to Lewis XIV. on the success
of his Arms. He wrote also some comedies and
operas. By the influence of Mad. Maintenon, he
was translated to the order of Cluny. He died in
1745, aged 82.

PELLEGRINI, Anthony, an eminent historical
painter, born at Padua, in 1674. He studied at
Venice under Paul Pagan. The D. of Manches-
ter brought him over to England, where he per-
formed several capital works for the nobility. He
died in 1741.

(1.) **PELLEGRINO**, Tibaldi, or Theobald, an
eminent Italian painter and sculptor, born at Bo-
logna, in 1522. He was employed by Charles V.
to ornament the Escorial; for which he was re-
warded with 100,000 crowns and the title of
marquis. He died in 1592, aged 70.

(2.) **PELLEGRINO** of Modena, an eminent It-
alian painter, born in that city, in 1511. He stu-
died under Raphael, and was employed in the
paintings of the Vatican. He died of a wound
received in the street in attempting to rescue his
son, who had committed murder.

(3.) **PELLEGRINO**, St, a town in Istria, 2 miles
SSE. of Umago.

(4.) **PELLEGRINO**, St, a town of France, in
Corfica, 21 miles SSE. of Bastia.

PELLEGRUE, a town of France, in the de-
partment of the Gironde, 30 miles E. of Bour-
deaux.

PELLENBERK, a town of France, in the dep.
of the Dyle, and ci-devant prov. of Austrian Bran-
bant; 3 miles E. of Louvain. Near it the French
republicans were defeated by the troops of the
allies, on the 22d March 1793, with the loss of
2000 men.

PELLENDORF, two towns of Austria: 1.
ten miles W. of Zisterdorf: 2. eight miles SE. of
Vienna.

PELLENEL, an ancient town of Achaia, in
Peloponnesus, W. of Sicyon, famous for its wool.
Strab. viii. *Paus.* vii. 26.

PELLENINKEN, a town of Prussian Lithua-
nia; 9 miles NE. of Insterburg.

(1.) **PELLERIN**, a town of France, in the dep.
X of

of the Lower Loire, with a harbour on the Loire; 9 miles N. of Nantes, and 12 SE. of Painbœuf.

(2.) PELLERIN, Joseph, an eminent French Antiquarian, born in 1683. He was commissary general, and Clerk of the French marine. He became famous for a capital collection of medals, which Lewis XIV. enabled him to purchase; and he enriched the science with a valuable work on the subject, in 9 vols 4to with numerous elegant plates. He died in 1782, aged 99.

(1.) * PELLET. *n. f.* [from *pila*, Lat. *pelote*, Fr.]

1. A little ball. A cube or *pellet* of yellow wax as much as half the spirit of wine, burnt only 87 pulses. *Bacon*.—That which is sold to the merchants, is made into little *pellets*, and sealed. *Sandys*.—I dressed with little *pellets* of lint. *Wifem*.
2. A bullet; a ball to be shot.—Left two bodies should be in one place, there must needs also follow an expulsion of the *pellet* or blowing up of the mine; but these are ignorant speculations; for flame, if there were nothing else, will be suffocated with any hard body, such as a *pellet* is, or the barrel of a gun. *Bacon*.—How shall they teach us in the air with those *pellets* they can hardly roll upon the ground. *L'Estrange*.—In a shooting trunk, the longer it is to a certain limit, the more forcibly the air passes and drives the *pellet*. *Roy*.

(2.) PELLETS, in heraldry, those roundles that are black; called also *ogresses* and *gunstones*, and by the late French heralds *toteaux de sable*.

* PELLETED. *adj.* [from *pellet*.] Consisting of bullets—

My brave Egyptians all,
By the discarding of this *pelleted* storm,

Lie graveless. *Shak.*

(1.) PELLETIER, Claud, a learned French lawyer, born at Paris, in 1630. He was counsellor of the Chatelet and President of the Merchants; in which office he constructed the celebrated quay which bears his name. He succeeded M. Colbert, as comptroller general of the finances. He wrote several books on Law; also *Comes Theologus*, *Comes Rusticus*, &c.

(2.) PELLETIER, James, M. D. and an eminent mathematician, born at Maps, in 1517. He was an excellent Latin and French poet, a good orator, physician and grammarian. He wrote *Oeuvres Poétiques Commentaires Latins sur Euclide*, and a Treatise on Orthography. He died at Paris, in 1583.

(3.) PELLETIER, Bertrand, a late eminent French chemist, born at Bayonne, in 1761. He was admitted a pupil in the chemical laboratory of the French college, when very young, and gave early proofs of genius. He studied 5 years under the celebrated prof. Darcet, and at 21 years of age, published *Observations on the Arsenical Acid*. After this his discoveries and publications became numerous: on the crystallization of sulphur, cinabar and the deliquescent salts; on zeolites; on the oxygenated muriatic acid; on æthers, phosphorus, the phosphoric acid, &c. But during his operations on that astonishing production of chemistry, PHOSPHORUS, he burned himself so dangerously, that he was confined to bed for six

months. On his recovery, he began his analysis of the plumbagos of various countries: and during his analysis of the carbonat of barytes, discovered by experiments on various animals that this earth is a true poison. He also analyzed frontian, verditer, &c. &c. and was going on successfully with his chemical experiments, when he at last fell a sacrifice to his thirst after science, by respiring the oxygenated muriatic gas till it had almost killed him in instantaneously; but though he recovered for the moment, it induced a convulsive asthma, and pulmonary consumption, which cut him off in the flower of his age; and he died at Paris, July 21st, 1797. He was a member of the Academy of Sciences at Paris.

(1.) * PELLICLE. *n. f.* [*pellucula*, Latin.] 1. A thin skin.—After the discharge of the fluid, the *pellicle* must be broke. *Sharp's Surgery*. 2. It is often used for the film which gathers upon liquors impregnated with salts or other substances, and evaporated by heat.

(2.) PELLICLE, among physicians denotes a thin film or fragment of a membrane.

PELLISON, or PELISSON FONTANIER, Paul, an author of the 17th century, was born at Beziers in 1624, and educated in the Protestant religion. In 1652 he purchased the post of secretary to the king, and in 1657, became first deputy to M. Fouquet. He suffered by the disgrace of that minister; and in 1661 was confined in the Bastille, whence he was not discharged till 1665. During his confinement he applied himself to the study of controversy; and in 1670 abjured the Protestant religion. Lewis XIV. rewarded him with an annual pension of 2000 crowns, and several posts. In 1676 he had the abbey of Giment, and some years after the priory of St Orens at Auch. He died at Versailles, in 1693. His principal works are, 1. The History of the French Academy. 2. Reflections on Religious Disputes, &c. in 4 vols 12mo. 3. The History of Lewis XIV. 4. Historical Letters and Miscellanies in 3 vols 12mo.

(1.) * PELLITORY. *n. f.* [*parietaria*, Latin.] An herb.

(2.) PELLITORY. See *PARIETARIA*.

(3.) PELLITORY, BASTARD. } Two species of

(4.) PELLITORY, DOUBLE. } *ACHILLÆA*. }

(5.) PELLITORY OF SPAIN. See *ANTHEMIS*,

Nº 3.

(6.) PELLITORY OF SPAIN, FALSE, a species of *CHRYSANTHEMUM*.

(7.) PELLITORY OF THE WALL. See *PARIETARIA*.

(8.) PELLITORY, TREE. See *ZANTHOXYLUM*.

* PELL-MELL. *adv.* [*peste meste*, Fr.] Confusedly; tumultuously; one among another; with confused violence.—

When we have dash'd them to the ground,

Then desic each other, and *pell mell*

Make work upon ourselves. *Shak. King John*.

Never yet did insurrection want

Such moody beggars starving for a time

Of *pell-mell* havoc and confusion. *Henry IV*.

—After these tenators have battered episcopal government with their paper shot, then they fall *pell-mell* upon the service book. *White*.—

He knew when to fall on *pell-mell*,
To fall back and retreat as well. *Hudibras.*

(1.) * **PELLS.** *n. f.* [*pellis*, Lat.] Clerk of the *pellis*, an officer belonging to the exchequer, who enters every teller's bill into a parchment roll called *pellis acceptorum*, the roll of receipts; and also makes another roll called *pellis exitum*, a roll of the disbursements. *Bailey.*

(2.) **PELLIS, CLERK OF THE.** See **CLERK**, N° 22.

* **PELLUCID.** *adj.* [*pellucidus*, Lat.] Clear; transparent; not opaque; not dark.—This is the case of agates and other coloured stones, the colours of several whereof may be extracted, and the bodies rendered as *pellucid* as crystal, without sensibly damaging the texture. *Woodward.*—If water be made warm in any *pellucid* vessel emptied of air, the water in the vacuum will bubble and boil as vehemently as it would in the open air in a vessel set upon the fire, till it conceives a much greater heat. *Newton's Opticks.*

* **PELLUCIDITY.** } *n. f.* [from *pellucid.*]
* **PELLUCIDNESS.** } Transparency; clear-

ness; not opacity.—The air is a clear and *pellucid* medium, in which the insensible particles of dissolved matter float, without troubling the *pellucidity* of the air; when on a sudden, by a precipitation, they gather into visible misty drops that make clouds. *Locke.*—We consider their *pellucidness* and the vast quantity of light, that passes through them, without reflection. *Keil.*

PELLUSIN, a town of France, in the department of the Rhone and Loire; 12 miles E. of St Etienne.

PELOPEIA, in fabulous history, the daughter of **THESTES**, and mother, by him, of **ÆGISTHUS**. See these articles.

PELOPIA, a festival observed by the Eleans in honour of Pelops. A ram was sacrificed on the occasion, which both priests and people were prohibited from partaking of, on pain of excommunication from Jupiter's temple; the neck only was allotted to the officer who provided wood for the sacrifice. This officer was called *μυρσις*; and white poplar was the only wood made use of at this solemnity.

PELOPIDAS, the son of Hippoclus, a celebrated general of Thebes, in Boeotia. He was descended of an illustrious family, and had immense riches, which he distributed with uncommon liberality among the poor citizens. He was the intimate friend of Epaminondas; and these two patriots, by their valour and public spirit, raised their country to a degree of importance and glory, that it never enjoyed before or after them. Thebes had been for some time under the government of Spartan tyrants, who exiled Pelopidas and the other friends of Theban independence; but Pelopidas returned from Athens, with a chosen band of twelve other exiled Thebans, who killed the Spartan tyrants, and restored liberty to their country. The Thebans then elected him governor of Boeotia, and associated Epaminondas with him; and these two great men immortalized their names by the decisive victory at Leuctra. (See **LEUCTRA**.) In a war which the Thebans afterwards carried on against Alexander, tyrant of Phœzæ, Pelopidas was appointed commander, but

had nearly lost his life, by trusting himself unarmed in the tyrant's camp. Though in the character of an ambassador, he was seized as a prisoner, but rescued by Epaminondas. He was afterwards killed in a battle with the same tyrant, though his troops obtained the victory A. A. C. 364; but his death was amply revenged by the Thebans, who took Phœzæ, and killed the tyrant. Statues of brass were erected, and every other mark of respect paid to the memory of Pelopidas; and his children were endowed with a large territory of land. *Xenoph. Plut. C. Nep. Diod. Polyb.*

(1.) **PELOPONNESIAN, adj.** Of or belonging to Peloponnesus.

(2.) **PELOPONNESIAN WAR**, *Peloponnesiacum Bellum*, a famous war, which lasted for 27 years between the Athenians and the inhabitants of Peloponnesus, with their respective allies, and which ended in the overthrow of the Athenian Republic, and its subjection to 30 tyrants. It is the most interesting of all the wars which happened among the inhabitants of ancient Greece. See **ATTICA**, § 12, 13.

PELOPONNESUS, a large peninsula in the S. of Greece; so called, from *Pelops* *νῆος*, or *insula*, though properly not an island, but a peninsula; yet wanting but little to be one, viz. the isthmus of Corinth, ending in a point. (*Diogenes*.) It was anciently called *Apia* and *PELAGIA*; and is situated between the Ægean and Ionian seas, and resembling a plantain-leaf, by its angular recesses or bays. (*Pliny, Strabo, Mela*.) Strabo adds from Homer, that one of its ancient names was *Argos*, with the epithet *Achaicum*, to distinguish it from Thessaly, called *Pelagium*. It was divided into six parts; viz. Argolis, Laconica, Messenia, Elis, Achaia, and Arcadia. (*Mela*.) It is now called the **MORÆA**. It comprehended the most southern parts of Greece; and was 200 miles long, and 140 broad.

PELOPS, in fabulous history, the son of Tantalus king of Phrygia. In his infancy he was murdered by his father, cut in pieces, and served up as a feast to the gods, to try their divine omniscience. None of them however eat of him, but Ceres, who eat one of his shoulders. Jupiter restored him to life, and gave him an ivory shoulder, which had the miraculous power of healing all diseases by its touch; and he punished the impiety of Tantalus, by condemning him to eternal hunger and thirst, in the view of excellent food and drink in hell. (See **TANTALUS**.) Pelops afterwards went into Elis, where he became a suitor of **HIPPODAMIA**, the daughter of **OENOMAUS**, king of Pisa, who being warned by an oracle, that he would perish by the hands of his son-in-law, and, being himself an excellent charioteer, refused to marry her to any person, but the man who should overcome him in a chariot race. The previous condition being, that those whom he defeated were to forfeit their lives, 13 young princes had already perished. Pelops, however, ventured to compete with him, and having previously bribed **MYRTILUS**, his charioteer, to mount him on an insufficient chariot, Oenomaus was killed in the course, but with his last breath, requested Pelops to avenge him on Myrtilus; which he accordingly did, by throwing him into

the sea, from him named MYRTOM MARE. Pelops then married Hippodamia, by whom he had ATREUS, THYESTES, *Pittheus*, *Troezen*, &c. He afterwards became so powerful that all the territory of Greece beyond the isthmus of Corinth was from him named PELOPONNESUS. After his death, he received divine honours, and was revered above all the other heroes of Greece. He had a temple at Olympia, erected by Hercules near that of Jupiter.

PELORIAS, } in ancient geography, one of
PELORIS, or } the 3 capes of Sicily, now called
PELORUS, } FARO. It is said to have been
so named from *Pelorus*, the pilot of the ship, which carried Hannibal out of Italy, whom that general, when he found the tide driving the vessel into the straits of Charybdis, killed, on the supposition that he was going to betray him to the Romans; and therefore to gratify his name, he named the cape after him.

PELOSO, a town of Naples, 35 miles W. of Bari. Lon. 16. 20 E. Lat. 41. 16 N.

PELOUAÏLLE, a town of France, in the dep. of Maine and Loire, 5 miles NE. of Angers, and 13½ W. of Bangé.

* PELT. *n. f.* (from *pellis*, Lat.) 1. Skin; hide. —The camel's hair is taken for the skin or *pelt* with the hair upon it. *Brown's Vulgar Errors*.—

A scabby tetter on their *pelts* will flck. *Dryd*.
2. The quarry of a hawk all torn. *Amfworth*.

* To PELT. *v. a.* [*poltern* German, *Skinner*; contracted from *pellet*, Mr *Lyc.*] 1. To strike with something thrown. It is generally used of something thrown, rather with teasing frequency than destructive violence.—

Poor naked wretches where'er you are
That bide the *pelting* of this pitiless storm! *Shak*.

The chiding billows seem to *pelt* the clouds.
Shakespeare.

No zealous brother there would want a *Pone*
To mail us cardinals, and *pelt* pope Joan. *Dryd*.

—Obscure persons have insulted men of great worth, and *pelted* them from coverts with little objections. *Atterbury*.—I might easily with stones *pelt* the metropolis to pieces. *Swift*. 2. To throw; to cast.—

My Phillis me with *pelted* apples plies. *Dryd*.

PELTA, a small, light, manageable buckler, used by the ancients. It was worn by the Amazons. It is said to have resembled an ivy leaf in form; by others, it is compared to the leaf of an Indian fig-tree; and by *Servius*, to the moon in her first quarter.

PELTARIA, in botany, a genus of the filiculosa order, belonging to the tetradynamia class of plants; and in the natural method, ranking under the 39th order, *Siliquosæ*. The filicula is entire, and nearly orbiculated, compressed-plane, and not opening.

* PELTING. *adj.* This word in *Shakespeare* signifies, I know not why, mean; paltry; pitiful.

Every *pelting* petty officer
Would use his heav'n for thunder. *Shak*.

Fogs, falling in the land,
Have every *pelting* river made so proud,

That they have overborn their continents. *Shak*.

They from sheepcotes and poor *pelting* villages
Enforce their charity. *Shak*.

—A tenement or *pelting* farm. *Shak*.

* PELTMONGER. *n. f.* [*pellio*, Lat. *pelt* and *monger*.] A dealer in raw hides.

(1) * PELVIS. *n. f.* [Latin.] The lower part of the belly.

(2) PELVIS. See ANATOMY, Index.

PELUSIUM, in ancient geography, a noble and strong city of Egypt, without the Delta, 20 stadia from the sea; situated amidst marshes; and hence its name and its strength. It is called the *key* or *inlet* of Egypt, by *Diodorus* and *Hirtius*; which being taken, the rest of Egypt lay quite exposed to an enemy. It is called *Sin* by *Ezekiel*. *Pelusiacus* the epithet. (*Virg. Diod.*) From its ruins arose *Damiatta*. *Pelusium* was often taken and pillaged during the wars of the Romans, the Greeks, and the Arabs. But in spite of so many disasters, she preserved to the time of the Crusades her riches and her commerce. The Christian princes, having taken it by storm, sacked it. It never again rose from its ruins; and the inhabitants went to *Damiatta*. See DAMIETTA.

(1) PEMBA, or PENDA, an island in the E. Indian Sea, near the coast of Africa; 100 miles in circumference; governed by a king, who is tributary to the Portuguese. Lon. 40. 0. E. Lat. 5. 55. S.

(2) PEMBA, a province of Africa, in Congo. Banza, or St Salvador, is the capital, according to Mr *Cruttwell*; but Dr *Brookes* says,

(3) PEMBA is the capital of the above province; in Lon. 18. 25. E. Lat. 7. 30. S.

PEMBRIDGE, a town of Herefordshire, on the Arrow; with an woollen manufacture, and a market on Tuesday; 12 mile NW. of Hereford, and 145 WNW. of London. Lon. 2. 42. W. Lat. 52. 14. N.

(1) PEMBROKE, a city of S. Wales, capital of Pembrokeshire. It is situated upon a creek of Milford-Haven, about 256 miles from London. It has two handsome bridges over two small rivers which run into a creek, forming the W. side of a promontory. It is well inhabited, has many good houses, one church, and a custom-house. It has one long straight street, upon a narrow part of a rock; and the two rivers seem to be two arms of Milford-Haven, which ebbs and flows close up to the town. It is governed by a mayor, bailiffs, and burgesses; and sends one member to the British parliament. It was anciently fortified with walls, and a magnificent castle seated on a rock at the W. end of the town. In this rock, under the chapel, is a natural cavern called *Wogan*, remarkable for a very fine echo: this is supposed to have been a store-room for the garrison, as there is a staircase leading into it from the castle; it has also a wide mouth towards the river. This structure being burnt a few years after it was erected, it was rebuilt. It was the birth-place of Henry VII. and is memorable for the brave defence made by the garrison for Charles I. It is 10 miles SE. of Haverford-west, 30 WSW. of Caermarthen, and 237 W. by N. of London. Lon. 5. 3. W. Lat. 51. 37. N.

(2) PEMBROKE, Countess of. See HERBERT, N° 3.

(3) PEMBROKE, a town of Massachusetts, in Plymouth county, 31 miles S. by E. of Boston; containing 1954 citizens, in 1795.

(4) PEMBROKE, a township of New Hampshire,

shire, in Rockingham county, on the E. side of the Merrimack, opposite Concord, and 5 miles SE. of it. In 1795 it had 956 citizens.

PEMBROKE-SHIRE, a county of Wales, bounded on all sides by the Irish Sea, except on the E. where it joins to Caermarthenshire, and on the NE. to Cardiganshire. It lies the nearest to Ireland of any county in Wales; and extends in length from N. to S. 35 miles, and from E. to W. 29. It is about 140 in circumference. It is divided into seven hundreds, and contains about 420,000 acres, one city, 8 market towns, 2 forests, and 145 parishes; and, according to the report made to the imperial parliament, on the 26th June 1801, contained 11,776 houses; 25,165 males, and 20,650 females; in all, 55,815 souls. It lies in the province of Canterbury, and diocese of St David's. It sends three members to parliament, viz. one for the shire, one for Haverfordwest, and one for the city. The air of Pembroke-shire, considering its situation, is good; but it is in general best farthest from the sea. The soil is generally fruitful, especially on the sea-coasts; its mountains produce pasture sufficient to maintain great numbers of sheep and goats. Its chief commodities are corn, cattle, pit-coal, marl, fish, and fowl. Among these last are falcons, called here *peregrins*. Amongst the birds common here are migratory sea-birds, that breed in the Isle of Ramsey, and the adjoining rocks called *The Bishop and his Clerks*. About the beginning of April. such flocks of birds of several sorts resort to these rocks as appear incredible to those who have not seen them. There is a division of the county styled *Rhos* in the Welch, which means a large green plain. It is inhabited by the descendants of the Flemings, placed there by Henry I. to curb the Welch, who were never able to expel them, though they often attempted it. On the coasts of this county is found a kind of alga or laver, the *laDuca marina* of Camden. It is gathered in spring; of which the inhabitants make a sort of food, called in Welch *thavan*, and in English *black butter*.

PEMIGEWASSET, a river of New Hampshire, which rises from the E. side of a hill, and after running 50 miles, joins the Winnipiscogee at Sanborntown, and forms the MERRIMACK.

PEMISSISAUQUEWAKEE, a river of the United States, in Maine, which runs into the Atlantic, in Lon. 68. 20. W. Lat. 44. 23. N.

(1.) **PEN**, in geography, a town of Somersetshire, in England, on the NE. side of Wincanton, where Kenwald, a West Saxon king, so totally defeated the Britons, that they were never after able to make head against the Saxons; and where, many ages after this, Edmund Ironside gained a memorable victory over the Danes, who had before, i. e. in 1001, defeated the Saxons in that same place.

(2.) * **PEN**. n. s. [*penna*, Latin.] x. An instrument of writing.—

Never durst poet touch a pen to write,
Until his ink were temper'd with love's sighs.

Eternal deities!

Who write whatever time shall bring to pass,

With pens of adamant on plates of brass.

He takes the papers, lays them down again;
And, with unwilling fingers, tries the pen.

—He remembers not that he took off pen from paper till he had done. *Fell*.—I can, by designing the letters, tell what new idea it shall exhibit the next moment, barely by drawing my pen over it, which will neither appear, if my hands stand still, or though I move my pen, if my eyes be shut.

The pens that did his pinions bind
Were like main-yards with flying canvas lin'd.

3. Wing; though even here it may mean feather.—

Feather'd soon and fledg'd,
They summ'd their pens.

4. [from *pennan*, Saxon.] A small inclosure; a coop.—My father stole two geese out of a pen. *Shak*.—The cook was ordered to dress capons for supper, and take the best in the pen. *L'Estr*.—

She in pens his flocks will fold.
Ducks in thy ponds, and chickens in thy pens,
And be thy turkeys num'rous as thy hens.

(3.) A **PEN** is usually formed of a goose's quill. Pens are also sometimes made of silver, brass, or iron. Dutch pens are made of quills that have passed through hot ashes, to take off the grosser fat and moisture, and render them more transparent.

(4.) **PEN**, or **PENSTOCK**. See **PENSTOCK**.

(5.) **PEN**, **FOUNTAIN**, is a pen made of silver, brass, &c. contrived to contain a considerable quantity of ink, and let it flow out by gentle degrees, so as to supply the writer a long time without being under the necessity of taking fresh ink. The fountain pen is composed of several pieces, as in *Plate CCLXXI*. where the middle piece F carries the pen, which is screwed into the inside of a little pipe, which again is folded to another pipe of the same bigness as the lid G; in which lid is folded a male screw, for screwing on the cover, as also for stopping a little hole at the place, and hindering the ink from passing through it. At the other end of the piece F is a little pipe, on the outside of which the top-cover H may be screwed. In the cover there goes a port-crayon, which is to be screwed into the last-mentioned pipe, in order to stop the end of the pipe, into which the ink is to be poured by a funnel. To use the pen, the cover G must be taken off, and the pen a little shaken, to make the ink run more freely.

(6.) **PEN**, **GEOMETRIC**, an instrument in which, by a circular motion, a right line, a circle, an ellipse, and other mathematical figures, may be described. It was first invented and explained by John Baptist Suardi, in a work entitled *Novo Istrumenti per la Descrizione di diverse Curve Antiche e Moderne*. &c. Several writers had observed the curves arising from the compound motion of two circles, one moving round the other; but Suardi first realized the principle, and first reduced.

duced it to practice. It has been lately introduced with success into the steam engine by Watt and Bolton. The number of curves this instrument can describe is truly amazing: the author enumerates not less than 1273, which (he says) can be described by it in the simple form. It is thus described in Adam's Geometrical and Graphical Essays. *Plate CCLXXI. fig. 1.* represents the geometric pen; A, B, C, the stand by which it is supported; the legs A, B, C are contrived to fold one within the other for the convenience of packing. A strong axis D is fitted to the top of the frame; and to the lower part of this axis any of the wheels (as *i*) may be adapted; when screwed to it, they are immoveable. EG is an arm contrived to turn round upon the main axis D; two sliding boxes are fitted to this arm; to these boxes any of the wheels belonging to the geometric pen may be fixed, and then slid so that the wheels may take into each other, and the immoveable wheel *i*: it is evident, that by making the arm EG revolve round the axis D, these wheels will be made to revolve also, and that the number of their revolutions will depend on the proportion between the teeth. FG is an arm carrying the pencil; this arm slides backwards and forwards in the box *c d*, in order that the distance of the pencil from the centre of the wheel *h* may be easily varied; the box *c d* is fitted to the axis of the wheel *h*, and turns round with it, carrying the arm *f g* along with it: it is evident, therefore, that the revolutions will be fewer or greater in proportion to the difference between the numbers of the teeth in the wheels *h* and *i*. This bar and socket are easily removed for changing the wheels. When two wheels only are used, the bar *f g* moves in the same direction with the bar EG; but if another wheel is introduced between them, they move in contrary directions. The number of teeth in the wheels, and consequently the relative velocity of the epicycle or arm *f g*, may be varied in *infinitum*. The numbers we have used are 8, 16, 24, 32, 40, 48, 56, 64, 72, 80, 88, 96. The construction and application of this instrument is so evident from the figure, that nothing more need be pointed out than the combinations by which various figures may be produced. We shall take two as examples: The radius of EG (*fig. 2.*) must be to that of *f g* as 10 to 5 nearly; their velocities, or the number of teeth in the wheels, to be equal; the motion to be in the same direction. If the length of *f g* be varied, the looped figure delineated at *fig. 3.* will be produced. A circle may be described by equal wheels, and any radius; but the bars must move in contrary directions. *To describe by this circular motion a straight line and an ellipse.* For a straight line, equal radii, the velocity as 1 to 2, the motion in a contrary direction; the same data will give a variety of ellipses, only the radii must be unequal; the ellipses may be described in any direction. See *fig. 4.*

(*) PEN, SFA. See PENNATULA.

* To PEN. *v. a.* pret. and part. pass. *pent.* [*pennan* and *pindan*, Saxon.] 1. To coop; to shut up; to incage; to imprison in a narrow place.

Away with her, and *pen* her up.

Shak.

My heavy son

Private in his chamber *pens* himself. *Shak.*

—The plaster alone would *pen* the humour already contained in the part. *Bacon.*

Their armour help'd their harm, crush'd in and bruise'd,

Into their substance *pent*.

Milton.

As when a prowling wolf,

Whom hunger drives to seek new haunt for prey,

Watching where shepherds *pen* their flocks at eve.

Milton.

—The glass, wherein it is *penned* up, hinders it to deliver itself by an expansion of its parts. *Boyle.*

They *pen* up their daughters, and permit them to be acquainted with none. *Harvey.*

Ah! that your business had been mine,

To *pen* the sheep.

Dryden.

2. [From the noun; pret. and part. pass. *penned*.] To write. It probably meant at first only the manual exercise of the pen, or mechanical part of writing; but it has been long used with relation to the style or composition.—

For prey these shepherds two he took,

Whose metal stiff he knew he could not bend

With one good dance or letter finely *penn'd*.

Sidney.

—I would be loath to cast away my speech; for, besides that it is excellently well *penn'd*, I have taken great pains to con it. *Shak.*—Read this challenge, mark but the *penn*ing of it. *Shak.*—A sentence spoken by him in English, and *penned* out of his mouth by four good secretaries, for trial of our orthography, was set down by them. *Camden.*—He frequented sermons, and *penned* notes with his own hand. *Hayward.*—The precepts *penned* or preached by the holy apostles were divine and perpetual. *White.*—The digesting my thoughts into order, and the setting them down in writing, was necessary; for without such strict examination as the *penn*ing them affords, they would have been disjointed and roving ones. *Digby.*

The judges, hearing with applause, at th' end Freed him, and said, no fool such lines had

penn'd.

Denham.

—Gentlemen should extempore, or after a little meditation, speak to some subject without *penn*ing of any thing. *Locke.*—Should I publish the praises that are so well *penned*, they would do honour to the persons who write them. *Addison.*

Twenty fools I never saw

Come with petitions fairly *penn'd*,

Desiring I should stand their friend.

Swift.

PENAC, a town of Naples, in Abruzzo Citra; 9 miles ESE. of Civita Borella.

PENÆA, in botany; a genus of the monogynia order, belonging to the tetrandria class of plants; and in the natural method ranking with those of which the order is doubtful. The calyx is diphyllous; the corolla is campanulate; the style quadrangular; the capsule tetragonal, quadrilocular, and octospermous.

PENA GARCIA, a town of Portugal, in Beira, with a castle. It was taken by Philip V. in 1704; but on the approach of the allies he retired from it. It is 6 miles E. of Idanha Velha. Lon. 6. 6. W. Lat. 39. 40. N.

* PENAL.

* **PENAL.** *adj.* [*penal*, Fr. from *pæna*, Latin.]
1. Denouncing punishment; enacting punishment.
—Gratitude plants such generosity in the heart of man, as shall more effectually incline him to what is brave and becoming than the terror of any *penal* law. *South.* 2. Used for the purposes of punishment; vindictive.—

Adamantine chains and *penal* fire. *Milton.*

* **PENALTY.** *n. f.* [*penalité*, old French.]
Liableness to punishment; condemnation to punishment.—Many of the ancients denied the Antipodes, and some unto the *penalty* of contrary affirmations. *Brown.*

* **PENALTY.** *n. f.* [from *penalité*, old French.]
1. Punishment; censure; judicial infliction.—Political power is a right of making laws with *penalties* of death, and consequently all less *penalties*, for preserving property. *Locke.*—

Wit dreads exile, *penalties* and pains.

Dunciad.

2. Forfeiture upon non-performance.—

Lend it rather to thine enemy,

Who, if he break, thou may'st with better face

Exact the *penalty*.

Shak.

PENALVA, a town of Portugal, in Beira; 9 miles N. of Coimbra, as Mr Cruttwell has it, but Dr Brookes makes it 8 miles S. of it. *Lop.* 8. 17. W. *Lat.* 40° 4'. N.

(1.) * **PENANCE.** *n. f.* [*penence*, old French; for *penitence*.] Infliction either public or private, suffered as an expression of repentance for sin.—

And bitter *penance*, with an iron whip,
Was wont him once to discipline every day.

Spenser.

Mew her up,

And make her bear the *penance* of her tongue.

Shak.

—No penitentiary, though he had enjoined him never to straight *penance* to expiate his first offence, would have counselled him to have given over the pursuit of his right. *Bacon.*—

The scourge

Inexorable, and the torturing hour

Calls us to *penance*.

Milton.

—A Lorian surgeon, who whipped the naked part with a great rod of nettles till all over blistered, persuaded him to perform this *penance* in a sharp fit he had. *Temple.*

(2.) **PENANCE** is a punishment, either voluntary or imposed by authority, for the faults a person has committed. *Penance* is one of the seven sacraments of the Romish church. Besides fasting, alms, abstinence, and the like, which are the general conditions of *penance*, there are others of a more particular kind; as the repeating a certain number of ave-marys, paternosters, and credos, wearing a hair shirt, and giving one's self a certain number of stripes. In Italy and Spain, it is usual to see Roman Catholics almost naked, loaded with chains and a cross, and lashing themselves at every step.

PEN-ANGLAS, a cape of S. Wales, on the N. coast of Pembrokehire. *Lon.* 4. 59. W. *Lat.* 51. 57. N.

PENATES, in Roman antiquity, a kind of tutelary deities, either of countries or particular

houses; in which last sense they differed in nothing from the lares. See **LARES**. They were properly the tutelary gods of the Trojans, and were adopted by the Romans, who gave them the title of *penates*.

PENAUTIER, a town of France, in the dep. of Aude, and ci-devant prov. of Languedoc; 4 miles N. of Carcassone. *Lon.* 2. 25. E. *Lat.* 43. 18. N.

PENBRAY, a cape on the S. coast of Wales, and county of Caermarthen, in the Bristol Channel; 3 miles S. of Kidwelly.

PENBUCHTOE HEAD, a cape of S. Wales, on the N. coast of Pembrokehire. *Lon.* 5. 5. E. *Lat.* 51. 56. N.

(1.) **PENCAITLAND**, a parish of Scotland, in E. Lothian, nearly in the form of an oblong square; 4 miles long from E. to W. and 3 broad. The Tyne divides it nearly into 2 equal parts. The soil is wet and clayey, and the old mode of farming prevails. The climate is salubrious; freestone and coals abound; and a coal engine has been erected. There are several mineral waters. There are 155 acres under strong oaks and birch; and 191 under forest trees. Some of the oaks are above 5½ feet thick. At Winton House there are also some fine trees. The population, in 1793, was 1033; increase 147 since 1755. There are 8 corn and barley mills, several threshing mills, and 3 for lint, &c. besides a bleachfield.

(2.) **PENCAITLAND, EASTER**, } two villages

(3.) **PENCAITLAND, WESTER**, } in the above parish, which, with those of *Nisbet* and *Winton*, contained 513 inhabitants in 1793.

PENCARROW, a cape of Cornwall, on the S. coast of the English Channel; 2 miles E. of the mouth of the Fowey.

* **PENCE.** *n. f.* The plural of *penny*; formed from *pennies*, by a contraction usual in the rapidity of colloquial speech.—The same servant found one of his fellow-servants, which owed him an hundred *pence*, and took him by the throat. *Mat.*

(1.) * **PENCIL.** *n. f.* [*penicillum*, Latin.] 1. A small brush of hair which painters dip in their colours.—The Indians will perfectly represent in feathers whatsoever they see drawn with *pencils*. *Heylyn.*—

Pencils can by one slight touch restore

Smiles to that changed face, that wept before.

Dryden.

Nature's ready *pencil* paints the flow'rs.

Dryden.

—A sort of pictures there is, wherein the colours, as laid by the *pencil* on the table, mark our very odd figures. *Locke.*—

The faithful *pencil* has design'd

Some bright idea of the master's mind. *Pope.*

2. A black lead pen, with which cut to a point they write without ink.—Mark with a pen or *pencil* the most considerable things in the books you desire to remember. *Watts.* 3. Any instrument of writing without ink.

(2.) **PENCILS**, (§ 1. *Def.* 1.) are of various kinds, and made of various materials; the largest sorts are made of boars bristles, the thick ends of which are bound to a stick, bigger or less according to the uses they are designed for: these, when large,

large, are called *brushes*. The finer sorts of pencils are made of camels, badgers, and squirrels hair, and of the down of swans; these are tied at the upper end with a piece of strong thread, and inclosed in the barrel of a quill. All good pencils, on being drawn between the lips, come to a fine point.

(3.) **PENCILS**, for drawing, are made of long pieces of black lead or red chalk, placed in a groove cut in a slip of cedar; on which other pieces of cedar being glued, the whole is plained round, and one of the ends being cut to a point, it is fit for use.

* **To PENCIL**, *v. n.* [from the noun.] To paint.—

Since dishonour traffics with man's nature,
He is but outside: pencil'd figures are
Ev'n such as they give out. *Shak.*

Nature pencils butterflies on flow'rs. *Harte.*

PENCKUM, a town of Germany, in Anterior Pomerania; 13 miles SW. of Old Stettin, and 44 NNW. of Cultrin. Lon. 31. 59. E. Ferro. Lat. 53. 15. N.

(1.) **PENDA**, the first king of Mercia, founded that kingdom, A. D. 626. He was killed by Oswy, K. of Northumberland, A. D. 655. See **MERCIA**.

(2.) **PENDA**. See **PEMBA**, N° 1.

PENDALUM, a promontory of Cyprus.

(1.) * **PENDANT**. *n. f.* [*pendant*, French.]

1. A jewel hanging in the ear.—

Some hang upon the pendants of her ear. *Pope.*

2. Any thing hanging by way of ornament.—

The smiling pendant which adorns her fo. *Waller.*

3. A pendulum. Obsolete.—To make the same pendant go twice as fast as it did. *Digby.* 4. A small flag in ships.

(1.) **PENDANTS**, (§ 1. def. 1.) are often composed of diamonds, pearls, and other jewels.

(3.) **PENDANTS**, in heraldry, parts hanging down from the label, to the number of three, four, five, or six at most, resembling the drops in the Doric freeze. When they are more than three, they must be specified in blazoning.

(4.) **PENDANTS OF A SHIP**, are those streamers, or long colours, which are split and divided into two parts, ending in points, and hung at the head of masts, or at the yard-arm ends.

* **PENDENCE**. *n. f.* [from *pendeo*, Lat.] Slopeness; inclination.—The Italians give the cover a graceful *pendence* or slopeness. *Wotton.*

* **PENDENCY**. *n. f.* [from *pendeo*, Lat.] Suspension; delay of decision.—Nor can the appellant allege pendency of suit. *Ayliffe.*

PENDENE-VOW, a town of Cornwall, on the N. coast, by Morvah. There is here an unfathomable cave under the earth, into which the sea flows at high water. The cliffs between this and St Ives shine as if they had flore of copper, of which indeed there is abundance within land.

PENDENNIS, a peninsula of Cornwall, at the mouth of Falmouth-haven, a mile and a half in compass. On this Henry VIII. erected a castle, opposite to that of St Maw's, which he likewise built. It was fortified by Q. Elizabeth, and served them for the governor's house. It is one of

the largest castles in Britain, and is built on a high rock. It is stronger by land than St Maw's, being regularly fortified, and having good out-works.

PENDENT. *adj.* [*pendens*, Latin; some write *pendant*, from the French.] 1. Hanging.—

With ribbons pendent, flaring about her head, *Shak.*

Desperate lady near a purling stream,
Or lover pendent on a willow tree. *Philips.*

2. Jutting over.—

A pendent rock,
A forked mountain, or blue promontory. *Shak.*

3. Supported above the ground.—

A ridge of pendent rock
Over the vex'd abyssa. *Milton.*

PENDERACHIA. See **PAPHLAGONIA**.

PEN-DINAS, a cape of Wales, on the N. coast of St Bride's Bay. Lon. 5. 10. W. Lat. 51. 48. N.

* **PENDING**. *n. f.* [*pendente lite*] Depending; remaining yet undecided.—A person, pending suit with the diocesan, shall be defended in the possession. *Ayliffe.*

(1.) **PENDLETON**, a county of S. Carolina, in Washington district, bounded N. by Greenville, E. by Laurens Co. SE. by Abbeville, S. and W. by the Savannah, which divides it from Georgia. It contained 3734 citizens, and 834 slaves in 1795. The surface is partly hilly, but fertile. The court house is 52 miles W. of Cambridge.

(2.) **PENDLETON**, a mountainous county of Virginia; bounded on the NW. by Randolph, NE. by Hardy, E. by Rockingham, and SW. by Bath counties. It is 40 miles long, and 30 broad; and, in 1795, contained 2306 citizens, and 73 slaves. It is watered by the S. branch of the Patomac. Frankford is the capital.

* **PENDULOSITY**. } *n. f.* [from *pendulous*.]

* **PENDULOUSNESS**. } The state of hanging; suspension.—His slender legs he encreased by riding, that is, the humours descended upon their pendulosity. *Brown.*

* **PENDULOUS**. *adj.* [*pendulus*, Lat.] Hanging; not supported below.—

All the plagues, that in the pendulous air

Hang fated o'er men's faults, light on thy daughters. *Shak.*

—Bellerophon's horse, fram'd of iron, and placed between two loadstones with wings expanded, hung pendulous in the air. *Brown.*—The grinders are furnished with three roots, and in the upper jaw often four, because these are pendulous. *Ray.*

(1.) * **PENDULUM**. *n. f.* [*pendulus*, Lat. *pendule*, Fr.] Any weight hung so as that it may easily swing backwards and forwards, of which the great law is, that its oscillations are always performed in equal time.—

Upon the bench I will so handle 'em,

That the vibration of this pendulum

Shall make all tailors yards of one

Unanimous opinion. *Hudibras.*

(2.) A **PENDULUM** is a vibrating body suspended from a fixed point. For the history of this invention, see **CLOCK**, § 2. The theory of the pendulum depends on that of the inclined plane. Hence, to understand the nature of the pendulum, it will be necessary to premise some of the properties

ties of this plane; referring however, to INCLINED PLANE, and MECHANICS, Part II. *Sec. IV.* for the demonstration. I. Let AC (*fig. 1. Plate CCLXXII.*) be an inclined plane, AB its perpendicular height, and D any heavy body: then the force which impels the body D to descend along the inclined plane AC, is to the absolute force of gravity as the height of the plane AB is to its length AC; and the motion of the body will be uniformly accelerated. II. The velocity acquired in any given time by a body descending on an inclined plane AC, is to the velocity acquired in the same time, by a body falling freely and perpendicularly as the height of the plane AB to its length AC. The final velocities will be the same; the spaces described, will be in the same ratio; and the times of description are as the spaces described. III. If a body descend along several contiguous planes, AB, BC, CD, (*fig. 2.*) the final velocity, namely, that at the point D, will be equal to the final velocity in descending through the perpendicular AE, the perpendicular heights being equal. Hence, if these planes be supposed indefinitely short and numerous, they may be conceived to form a curve; and therefore the final velocity acquired by a body in descending through any curve AF, will be equal to the final velocity acquired in descending through the planes AB, BC, CD, or to that in descending through AE, the perpendicular heights being equal. IV. If from the upper or lower extremity of the vertical diameter of a circle, a cord be drawn, the time of descent along this cord will be equal to the time of descent through the vertical diameter; and therefore the times of descent through all cords in the same circle, drawn from the extremity of the vertical diameter, will be equal. V. The times of descent of two bodies through two planes equally elevated, will be in the subduplicate ratio of the lengths of the planes. If, instead of one plane, each be composed of several contiguous planes similarly placed, the times of descent along these planes will be in the same ratio. Hence, also, the times of describing similar arches of circles similarly placed, will be in the subduplicate ratio of the lengths of the arches. VI. The same things hold good with regard to bodies projected upward, whether they ascend upon inclined planes or along the arches of circles. The point or axis of suspension of a pendulum, is that point about which it performs its vibrations, or from which it is suspended. The centre of oscillation, is a point in which, if all the matter in a pendulum were collected, any force applied at this centre would generate the same angular velocity in a given time as the same force when applied at the centre of gravity. The length of a pendulum is equal to the distance between the axis of suspension and centre of oscillation. Let PN (*fig. 3.*) represent a pendulum suspended from the point P; if the lower part N of the pendulum be raised to A, and let fall, it will by its own gravity descend through the circular arch AN, and will have acquired the same velocity at the point N that a body would acquire in falling perpendicularly from C to N, and will endeavour to go off with that velocity in the tan-

gent ND; but being prevented by the rod or cord, will move through the arch NB to B, where, losing all its velocity, it will by its gravity descend through the arch BN, and, having acquired the same velocity as before, will ascend to A. In this manner it will continue its motion forward and backward along the arch ANB, which is called an oscillatory or vibratory motion; and each swing is called a vibration. PROP. I. If a pendulum vibrates in very small circular arches, the times of vibration may be considered as equal, whatever be the proportion of the arches. Let PN (*fig. 4.*) be a pendulum; the time of describing the arch AB, will be equal to the time of describing CD; these arches being supposed very small. Join AN, CN; then since the times of descent along all cords in the same circles, drawn from one extremity of the vertical diameter, are equal; therefore, the cords AN, CN, and consequently their doubles, will be described in the same time; but the arches AN, CN being supposed very small, will therefore be nearly equal to their cords: hence the times of vibrations in these arches will be nearly equal. PROP. II. Pendulums which are of the same length, vibrate in the same time whatever be the proportion of their weights. This follows from the property of gravity, which is always proportional to the quantity of matter, or to its inertia. When the vibrations of pendulums are compared, it is always understood that the pendulums describe either similar finite arcs, or arcs of evanescent magnitude, unless the contrary is mentioned. PROP. III. If a pendulum vibrates in the small arc of a circle, the time of one vibration is to the time of a body's falling perpendicularly through half the length of the pendulum as the circumference of a circle is to its diameter. Let PE (*fig. 5.*) be the pendulum which describes the arch ANC in the time of one vibration; let PN be perpendicular to the horizon, and draw the cords AC, AN; take the arc Ee infinitely small, and draw EFG, efg perpendicular to PN, or parallel to AC; describe the semicircle BGN, and draw er, gs perpendicular to EG: now let t = time of descending through the diameter $2PN$, or through the cord AN; then the velocities gained by falling through $2PN$, and by the pendulum's descending through the arch AE, will be as $\sqrt{2PN}$ and \sqrt{BF} ; and the space described in the time t , after the fall through $2PN$, is $4PN$. But the times are as the spaces divided by the velocities.

Therefore $\frac{4PN}{\sqrt{2PN}}$ or $2\sqrt{2PN} :: \frac{Ee}{\sqrt{BF}}$: time of describing Ee = $\frac{t \times Ee}{2\sqrt{2PN} \times \sqrt{BF}}$. But in the similar triangles PEF, Eer, and KGF, $Gg :: As PE = PN : EF :: Ee : er = \frac{EF}{PN} \times Ee$; And $KG = KD : FG :: Gg : Gs = \frac{FG}{KD} \times Gg$. But $er = Gs$; therefore $\frac{EF}{PN} \times Ee = \frac{FG}{KD} \times Gg$. Hence $Ee = \frac{PN \times FG}{KD \times EF} \times Gg$. And by substituting this

Y

value

value of $E \epsilon$ in the former equation, we have the time of describing $E \epsilon = \frac{t \times PN \times FG \times Gg}{2KD \times EF \times \sqrt{BF \times FN}}$:

But by the nature of the circle $FG = \sqrt{BF \times FN}$, and $EF = \sqrt{PN + PF \times FN}$. Hence, by substitution we obtain the time of describing $E \epsilon = \frac{t \times PN \times \sqrt{BF \times FN} \times Gg}{2KD \times \sqrt{PN + PF \times FN} \times \sqrt{BF \times FN}}$

$$= \frac{2KD \times \sqrt{PN + PF \times FN} \times \sqrt{BF \times FN} \times Gg}{t \times \sqrt{PN} \times Gg} = \frac{t \times \sqrt{2PN} \times Gg}{2KD \times \sqrt{PN + PF \times \frac{1}{2}} \times \sqrt{2}} = \frac{t \times \sqrt{2PN} \times Gg}{t \times \sqrt{2PN}}$$

$= \frac{2BN \times \sqrt{2PN - NF} \times Gg}{t \times \sqrt{2PN}}$. But NF , in its mean quantity for all the arches Gg , is nearly equal to NK ; For if the femicircle described on the diameter BN , which corresponds to the whole arch AN , be divided into an indefinite number of equal arches Gg , &c. the sum of all the lines NF will be equal to as many times NK as there are arches in the same circle equal to Gg . Therefore

the time of describing $E \epsilon = \frac{t \times \sqrt{2PN}}{2BN \times \sqrt{2PN - NK}} \times Gg$. Whence the time of describing the arch $AED = \frac{t \times \sqrt{2PN}}{2BN \times \sqrt{2PN - NK}} \times BGN$; and the time of describing the whole arch ABC , or the time of one vibration, is $= \frac{t \times \sqrt{2PN}}{2BN \times \sqrt{2PN - NK}} \times 2BGN$. But when the

arch ANC is very small, NK vanishes, and then the time of vibration in a very small arc, is

$$= \frac{t \times \sqrt{2PN}}{2BN \times \sqrt{2PN}} \times 2BGN = \frac{1}{2} t \times \frac{2BGN}{BN} \text{ Now,}$$

if t be the time of descent through a PN ; then since the spaces described are as the squares of the times, $\frac{1}{2} t$ will be the time of descent through $\frac{1}{2} PN$: therefore the diameter BN is to the circumference $2BGN$, as the time of falling through half the length of the pendulum is to the time of one vibration. PROP. IV. The length of a pendulum vibrating seconds is to twice the space through which a body falls in one second, as the square of the diameter of a circle is to the square of its circumference. Let d = diameter of a circle = 1, c = circumference = 3.14159, &c. t to the time of one vibration, and p the length of the corresponding pendulum; then by last proposition $c : d :: t^2 : \frac{d}{c}$ = time of falling through half the length of the pendulum. Let s = space described by a body falling perpendicularly in the first second: then since the spaces described are in the subduplicate ratio, of the times of description, therefore

$t^2 : \frac{d}{c} :: \sqrt{s} : \sqrt{\frac{1}{2}p}$. Hence $c^2 : d^2 :: 2s : p$. It has been found by experiment, that in latitude $51\frac{1}{2}^\circ$ a body falls about 16.11 feet in the first second: hence the length of a pendulum vibrating seconds in that latitude is $= \frac{32.22}{3.14159} = 3$ feet

3.174 inches. PROP. V. The times of the vibra-

tions of town pendulums in similar arcs of circles are in a subduplicate ratio of the lengths of the pendulums. Let PN , PO (fig. 6.) be two pendulums vibrating in the similar arcs AB , CD ; the time of a vibration of the pendulum PN is to the time of a vibration of the pendulum PO in subduplicate ratio of PN to PO . Since the arcs AN , CO are similar and similarly placed, the time of descent through AN will be to the time of descent through CO in the subduplicate ratio of AN to CO : but the times of descent through the arcs AN and CO are equal to half the times of vibration of the pendulums PN PO respectively. Hence the time of vibration of the pendulum PN , in the arch AB is to the time of vibration of the pendulum PO in the similar arc CD in the subduplicate ratio of AN to CO : and since the radii PN PO are proportional to the similar arcs, AN CO , therefore the time of vibration of the pendulum PN will be to the time of vibration of the pendulum PO in a subduplicate ratio of PN to PO . If the length of a pendulum vibrating seconds be 39.174 inches, then the length of a pendulum vibrating half seconds will be 9.793 inches.

For $1' : \frac{1}{2}'' :: \sqrt{39.174} : \sqrt{x}$; and $1 : \frac{1}{2} :: 39.174 : x$.

Hence $x = \frac{39.174}{4} = 9.793$. PROP. VI. The

length of pendulums vibrating in the same time, in different places, will be as the forces of gravity. For the velocity generated in any given time as directly as the force of gravity, and inversely as the quantity of matter. (See MECHANICS, P. I, S. VI.) Now the matter being supposed the same in both pendulums, the velocity is as the force of gravity; and the space passed through in a given time, will be as the velocity; that is, as the gravity. COR. Since the length of pendulums vibrating in the same time in small arcs are as the gravitating forces, and as gravity increases with the latitude on account of the spheroidal figure of the earth and its rotation about its axis; hence the length of a pendulum vibrating in a given time, will be variable with the latitude, and the same pendulum will vibrate slower the nearer it is carried to the equator. PROP. VII. The time of vibrations of pendulums of the same length, acted upon by different forces of gravity, are reciprocally as the square roots of the forces. For when the matter is given, the velocity is as the force and time; and the space described by any given force, is as the force and square of the time. Hence the lengths of pendulums are as the forces and the squares of the times of falling through them. But these times are in a given ratio to the times of vibration; whence the lengths of pendulums are as the forces and the squares of the times of vibration. Therefore, when the lengths are given, the forces will be reciprocally as the square of the times, and the times of vibration reciprocally as the square roots of the forces. COR. Let p = length of pendulum, g = force of gravity, and t = time of vibration. Then since $p = g \times t^2$. Hence $g =$

$p \times \frac{1}{t^2}$; and $t = \sqrt{p \times \frac{1}{g}}$. That is, the forces in different places are directly as the lengths of the pendulums, and inversely as the square roots of the times of vibration; and the times of vibration

tion are directly as the square roots of the lengths of the pendulums, and inversely as the square roots of the gravitating forces. PROP. VIII. A pendulum which vibrates in the arch of a cycloid describes the greatest and least vibrations in the same time. This property is demonstrated only on a supposition that the whole mass of the pendulum is concentrated in a point: but this cannot take place in any really vibrating body; and when the pendulum is of finite magnitude, there is no point given in position which determines the length of the pendulum; on the contrary the centre of oscillation will not occupy the same place in the given body, when describing different parts of the tract it moves through, but will continually be moved in respect of the pendulum itself during its vibration. This circumstance has prevented any general determination of the time of vibration in a cycloidal arc, except in the imaginary case referred to. There are many other obstacles which concur in rendering the application of this curve to the vibration of pendulums designed for the measures of time the source of errors far greater than those which by its peculiar property it is intended to obviate; and it is now wholly disused in practice. Although the times of vibration of a pendulum in different arches be nearly equal, yet from what has been said, it will appear, that if the ratio of the least of these arches to the greatest be considerable, the vibrations will be performed in different times; and the difference, though small, will become sensible in the course of one or more days. In clocks used for astronomical purposes, it will therefore be necessary to observe the arc of vibration; which if different from that described by the pendulum when the clock keeps time, there a correction must be applied to the time shown by the clock. This correction, expressed in seconds of time, will be equal to the half of three times the difference of the square of the given arc, and of that of the arc described by the pendulum when the clock keeps time, these arcs being expressed in degrees; and so much will the clock gain or lose according as the first of these arches is less or greater than the second. Thus if the clock keeps time when the pendulum vibrates in an arch of 3° , it will lose $10\frac{1}{2}$ seconds daily in an arch of 4 degrees. For $4^2 - 3^2 \times \frac{1}{2} = 7 \times \frac{1}{2} = 10\frac{1}{2}$ seconds. The length of a pendulum rod increases with heat; and the quantity of expansion answering to any given degree of heat is experimentally found by means of a pyrometer; (see PYROMETER;) but the degree of heat at any given time is shown by a thermometer: hence that instrument should be placed within the clock-case at a height nearly equal to that of the middle of the pendulum; and its height, for this purpose, should be examined at least once a day. Now, by a table constructed to exhibit the daily quantity of acceleration or retardation of the clock, answering to every probable height of the thermometer, the corresponding correction may be obtained. It is also necessary to observe, that the mean height of the thermometer during the interval ought to be used. In Six's thermometer this height may be easily obtained; but in thermometers of the common construction it will be more difficult to find this mean. It has been found, by

repeated experiments, that a brass rod equal in length to a second pendulum will expand or contract one thousandth part of an inch by a change of temperature of one degree in Fahrenheit's thermometer; and since the times of vibration are in a subduplicate ratio of the lengths of the pendulum, hence an expansion or contraction of one thousandth part of an inch will answer nearly to one second daily: therefore a change of one degree in the thermometer will occasion a difference in the rate of the clock, equal to one second daily. Whence, if the clock be so adjusted as to keep time when the thermometer is at 55° , it will lose 10 seconds daily when the thermometer is at 65° , and gain as much when it is at 45° . Hence the daily variation of the rate of the clock from summer to winter will be very considerable. It is true indeed that most pendulums have a nut or regulator at the lower end, by which the bob may be raised or lowered a determinate quantity; and therefore, while the height of the thermometer is the same, the rate of the clock will be uniform. But since the state of the weather is ever variable, and as it is impossible to be raising or lowering the bob of the pendulum at every change of the thermometer, therefore the correction formerly mentioned is to be applied. This correction, however, is in some measure liable to a small degree of uncertainty; and in order to avoid it altogether, several contrivances have been proposed, by constructing a pendulum of different materials, and so disposing them that their effects may be in opposite directions, and thereby counterbalance each other; and thus the pendulum will continue of the same length. See N° 6, 7, 8.

(3.) PENDULUM, ANGULAR, is formed of two pieces or legs like a sector, and is suspended by the angular point. This pendulum was invented with a view to diminish the length of the common pendulum, but at the same time to preserve or even increase the time of vibration. In this pendulum, the time of vibration depends on the length of the legs, and on the angle contained between them conjointly, the duration of the time of vibration increasing with the angle. Hence a pendulum of this construction may be made to oscillate in any given time. At the lower extremity of each leg of the pendulum is a ball or bob as usual. It may be easily shown, that in this kind of a pendulum, the squares of the times of vibration are as the secants of half the angle contained by the legs: hence, if a pendulum of this construction vibrates half seconds when its legs are close, it will vibrate whole seconds when the legs are opened, so as to contain an angle equal to $151^\circ 24'$.

(4.) PENDULUM, CONICAL, or CIRCULAR, is so called from the figure described by the string or ball of the pendulum. This pendulum was invented by Mr Huygens, and also claimed by Dr Hook. To understand the principles of this pendulum, it will be necessary to premise the following lemma, viz. the times of all the circular revolutions of a heavy globular body, revolving within an inverted hollow paraboloid, will be equal, whatever be the radii of the circles described by that body. To construct the pendulum, therefore, so that its ball may always describe its revolutions in a paraboloid surface, it will be necessary that the

road of the pendulum be flexible, and that it be suspended in such a manner as to form the evolute of the given parabola. Hence, let KH (fig. 9.) be an axis perpendicular to the horizon, having a pinion at K moved by the last wheel in the train of the clock; and a hardened steel point at H moving in an agate pivot, to render the motion as free as possible. Now, let it be required that the pendulum shall perform each revolution in a second, then the paraboloid surface it moves in must be such whose *latus rectum* is double the length of the common half second pendulum. Let O be the focus of the parabola MEC, and MC the *latus rectum*; and make $AE=MO=\frac{1}{2}MC$ the length of a common half second pendulum. At the point A of the verge, let a thin plate AB be fixed at one end, and at the other end B let it be fastened to a bar or arm BD perpendicular to DH, and to which it is fixed at the point D. The figure of the plate AB is that of the evolute of the given parabola MEC. The equation of this evolute, being also that of the semicubical parabola, is $\frac{27}{16}p^2x^2=y^3$.—Let $\frac{27}{16}p^2=P$; then $Px^2=y^3$, and in the focus $P=2y$. In this case $x^2=y^3=\frac{1}{2}P^2$: hence $x^2=\frac{1}{2}P^2$, and $x=P\sqrt{\frac{1}{2}}=\frac{27}{16}p^2\sqrt{\frac{1}{2}}$ the distance of the

focus from the vertex A.—By assuming the value of x , the ordinates of the curve may be found; and hence it may be easily drawn. The string of the pendulum must be of such a length that when one end is fixed at B, it may lie over the plate AB, and then hang perpendicular from it, so that the centre of the bob may be at E when at rest. Now, the verge KH being put in motion, the ball of the pendulum will begin to gyrate, and thereby contrive a centrifugal force which will carry it out from the axis to some point F, where it will circulate seconds or half seconds, according as the line AE is 9.8 inches, or $2\frac{1}{2}$ inches, and AB answerable to it. One advantage possessed by a clock having a pendulum of this construction is, that the second hand moves in a regular and uniform manner, without being subject to those jerks or starts as in common clocks; and the pendulum is entirely silent.

(5.) PENDULUM, FIR. The expansion or contraction of straight-grained fir wood lengthwise, by change of temperature, is so small, that it is found to make very good pendulum rods. The wood called *sipadillo* is said to be still better. There is good reason to believe, that the previous baking, varnishing, gilding, or soaking of these woods in any melted matter, only tends to impair the property that renders them valuable. They should be simply rubbed on the outside with wax and a cloth. In pendulums of this construction the error is greatly diminished, but not taken away.

(6.) PENDULUM, GRIDIRON, is an ingenious contrivance for the purpose above mentioned, § 2. Instead of one rod, this pendulum is composed of any convenient odd number of rods, as five, seven, or nine; being so connected, that the effect of one set of them counteracts that of the other set; and therefore, if they are properly adjusted to each other, the centres of suspension and oscillation will always be equidistant. Fig. 7. represents

a gridiron pendulum composed of nine rods, steel and brass alternately. The two outer rods, AB, CD, which are of steel, are fastened to the cross pieces AC, BD by means of pins. The next two rods, EF, GH, are of brass, and are fastened to the lower bar BD, and to the second upper bar EG. The two following rods are of steel, and are fastened to the cross bars EG and IK. The two rods adjacent to the central rod being of brass, are fastened to the cross pieces IK and LM; and the central rod, to which the ball of the pendulum is attached, is suspended from the cross piece LM, and passes freely through a perforation in each of the cross bars IK, BD. From this disposition of the rods, it is evident that, by the expansion of the extreme rods, the cross piece BD, and the two rods attached to it, will descend: but since these rods are expanded by the same heat, the cross piece EG will consequently be raised, and therefore also the two next rods: but because these rods are also expanded, the cross bar IK will descend; and by the expansion of the two next rods, the piece LM will be raised a quantity sufficient to counteract the expansion of the central rod. Whence it is obvious, that the effect of the steel rods is to increase the length of the pendulum in hot weather, and to diminish it in cold weather, and that the brass rods have a contrary effect upon the pendulum. The effect of the brass rods must, however, be equivalent, not only to that of the steel rods, but also to the part above the frame and spring, which connects it with the clock, and to that part between the lower part of the frame and the centre of the ball.

(7.) PENDULUM, MERCURIAL, was invented by the celebrated Mr George Graham. In this, the rod of the pendulum is a hollow tube, in which a sufficient quantity of mercury is put. Mr Graham first used a glass tube, and the clock to which it was applied was placed in the most exposed part of the house. It was kept constantly going, without having the hands or pendulum altered, from the 9th of June 1721 to the 14th of October 1725, and its rate was determined by transits of fixed stars. Another clock made with extraordinary care, having a pendulum about 60 lb. weight, and not vibrating above one degree and a half from the perpendicular, was placed beside the former, the more readily to compare them with each other, and that they might both be equally exposed. The result of all the observations was this, that the irregularity of the clock with the quicksilver pendulum exceeded not, when greatest, a sixth part of that of the other clock with the common pendulum, but for the greatest part of the year not above an eighth or ninth part; and even this quantity would have been lessened, had the column of mercury been a little shorter: for it differed a little the contrary way from the other clock, going faster with heat and slower with cold. To confirm this experiment more, about the beginning of July 1723 Mr Graham took off the heavy pendulum from the other clock, and made another with mercury, but with this difference, that instead of a glass tube he used a brass one, and varnished the inside to secure it from being injured by the mercury. This pendulum he used after-

afterwards, and found it about the same degree of exactness as the other.

(8.) PENDULUM, M. THOUT'S. Another excellent contrivance for the same purpose is described by M. Thout a French author on clock-making. Of this pendulum somewhat improved by Mr Croftwaite, watch and clockmaker, Dublin, we have the following description in the *Transactions of the Royal Irish Academy*, 1788.—“A and B (fig. 8.) are two rods of steel forged out of the same bar, at the same time, of the same temper, and in every respect similar. On the top of B is formed a gibbet C; this rod is firmly supported by a steel bracket D, fixed on a large piece of marble E, firmly set into the wall F, and having liberty to move freely upwards between cross staples of brass, 1, 2, 3, 4, which touch only in a point in front and rear (the staples having been carefully formed for that purpose); to the other rod is firmly fixed by its centre the lens G, of 24 pounds weight, although it should in strictness be a little below it. This pendulum is suspended by a short steel spring on the gibbet at C; all which is entirely independent of the clock. To the back of the clock-plate I, are firmly screwed two cheeks nearly cycloidal at K, exactly in a line with the centre of the verge L. The maintaining power is applied by a cylindrical steel stud, in the usual way of regulators, at M. Now, it is very evident that any expansion or contraction that takes place in either of these exactly similar rods, is instantly counteracted by the other; whereas in all compensation pendulums composed of different materials, however just calculation may seem to be, that can never be the case, as not only different metals, but also different bars of the same metal that are not manufactured at the same time, and exactly in the same manner, are found by a good pyrometer to differ materially in their degrees of expansion and contraction, a very small change affecting one and not the other.” Theory has pointed out several other pendulums, known by the names of *Elliptic*, *Horizontal*, *Rotary*, &c. pendulums. These, however, have not as yet attained that degree of perfection as to supplant the common pendulum. Besides the use of the pendulum in measuring time, it has also been suggested to be a proper standard for measures of length. See MEASURE.

PENE, a river of Pomerania, in the isle of Usedom, which runs into the Baltic, at Penemunder.

PENEA. See PENÆA.

PENEDONE, a town of Portugal, in Beira; 20 miles NE. of Viseu.

PENELLA, a town of Portugal, in Beira, 15 miles SE. of Coimbra.

(1.) PENELOPE, in fabulous history, the daughter of Icarus, who married Ulysses, by whom he had Telemachus. During the absence of Ulysses, who was gone to the siege of Troy, and who staid 20 years from his dominions, several princes, charmed with Penelope's beauty, told her that Ulysses was dead, offered to marry her, and pressed her to declare in their favour. She promised compliance, on condition they would give her time to finish a piece of tapestry she was weaving; but at the same time she undid in the night what she had done in the day, and thus eluded their importunity until Ulysses's return.

(II.) PENELOPE, in ornithology, a genus of birds of the order of *gallinae*, the characters of which are: The beak is bare at the base; the head is covered with feathers; the neck is quite bare; the tail consists of twelve principal feathers; and the feet are for the most part bare. Linnæus, in the *Systema Naturæ*, enumerates six species.

1. PENELOPE CRAX CUMANENSIS, called by Latham, &c. YACOU. It is bigger than a common fowl. The bill is black; the head feathers are long, pointed, and form a crest, which can be erected at pleasure. The irides are of a pale rufous colour; the space round the eye is naked, similar to that of a turkey. It has also a naked membrane or kind of *quattle*, of a dull black colour. The blue skin comes forward on the bill, but is not liable to change colour like that of the turkey. The plumage has not much variation; it is chiefly brown, with some white markings on the neck, breast, wing coverts, and belly; the tail is composed of twelve feathers, pretty long, and even at the end; the legs are red. This species inhabits Cayenne, but is a very rare bird, being met with only in the inner parts, or about the Amazons country, though in much greater plenty up the river Oyapoc, especially towards Camoupi; and indeed those which are seen at Cayenne are mostly tame ones, for it is a familiar bird, and will breed in that state, and mix with other poultry. It makes the nest on the ground, and hatches the young there, but is at other times mostly seen on trees. It frequently erects the crest, when pleased or taken notice of, and likewise spreads the tail upright like a fan, in the manner of the turkey. It has two kinds of cry; one like that of a young turkey, the other lower and more plaintive; the first of these is thought by the Indians to express the word *couyovoit*, the other *yacou*.

2. PENELOPE MARALIA, the *marail*, is about the size of a fowl, and shaped somewhat like it. The bill and irides are blackish; the space round the eye is bare, and of a pale red; the chin, throat, and fore part of the neck are scarcely covered with feathers; but the throat itself is bare, and the membrane elongated to half an inch or more; both this and the skin round the eyes change colour, and become deeper and thicker when the bird is irritated. The head feathers are longish, so as to appear like a crest when raised up, which the bird often does when agitated; at which time it also erects those of the whole body; and so disfigures itself as to be scarce known. The general colour of the plumage is a greenish black; the fore part of the neck is tipped with white; the wings are short; the tail is long; consisting of 12 feathers which are even at the end, and commonly pendent, but can be lifted up, and spread out like that of the turkey; the legs and toes are of a bright red; the claws are crooked, and somewhat sharp. In a collection (says Latham) from Cayenne was a bird, I believe, of this very species. It was 28 inches long; the bill is, like that of a fowl, brown, and rather hooked; round the eye bare; the head is crested; the feathers of the fore part of the neck are tipped with white; the breast and belly are rufous brown; the rest of the plumage is greenish brown; the

the tail is 11 inches long, and rounded at the end; the quills just reach beyond the rump; the legs are brown, and the claws hooked. This species is common in the woods of Guiana, at a distance from the sea, though it is less known than could be imagined; and generally found in small flocks, except in breeding time, when it is only seen by pairs, and then frequently on the ground, or on low shrubs; at other times, on high trees, where it roosts at night. The female makes her nest on some low bushy trees as near the trunk as possible, and lays three or four eggs. When the young are hatched, they descend with their mother, after 10 or 12 days. The mother acts as other fowls, scratching on the ground like a hen, and brooding the young, which quit their nurse the moment they can shift for themselves. They have two broods in a year; one in Dec. or Jan. the other in May or June. The best time of finding these birds is morning or evening, being then met with on such high trees whose fruit they feed on, and are discovered by some of it falling to the ground. The young birds are easily tamed, and seldom forsake the places where they have been brought up: they need not be housed, as they prefer the roosting on tall trees to any other place. Their cry is not inharmonious, except when irritated or wounded, when it is harsh and loud. Their flesh is much esteemed. Buffon supposes this bird to be the female of the yacou, or at least a variety; but that this cannot be, the anatomical inspection will at once determine. The windpipe of this bird has a singular construction, passing along the neck to the entrance of the breast, where it arises on the outside of the flesh, and after going a little way downwards, returns, and then passes into the cavity of the lungs. It is kept in its place on the outside by a muscular ligament, which is perceivable quite to the breast-bone. This is found to be the case in both male and female, and plainly proves that it differs from the yacou, whose windpipe has no such circumvolution in either sex. If this be the bird mentioned by Fermin, in his History of Guiana, p. 176, he says that the crest is cuneiform, and of a black and white colour; and observes that they are scarce at Surinam; but it does not seem quite certain whether he means this species or the yacou. Bancroft mentions a bird of Guiana by the name of *Marrodée*, which he says is wholly of a brownish black: the bill the same; and the legs grey. These he says are common, and make a noise not unlike the name given it, perching on trees. The Indians imitate their cry so exactly, as to lead to the discovery of the place the birds are in, by their answering it. The flesh of them is like that of a fowl: it is therefore most likely the marail.

3. *PENELOPE MELEAGRIS CRISTATA*, called by Ray *penelope jacupeme*, and by Edwards the *guam*, or *QUAN*, is about the size of a fowl, being about two feet six inches long. The bill is two inches long, and of a black colour; the irides are of a dirty orange colour; the sides of the head are covered with a naked purplish blue skin, in which the eyes are placed: beneath the throat, for an inch and a half, the skin is loose, of a fine red colour, and covered only with a few hairs.

The top of the head is furnished with long feathers, which the bird can erect as a crest at pleasure; the general colour of the plumage is brownish black, glossed over with copper in some lights; but the wing coverts have a greenish and violet gloss. The quills mostly incline to a purple colour; the fore part of the neck, breast, and belly, are marked with white spots; the thighs, under tail coverts, and the tail itself, are brownish black; the legs are red; the claws black. Some of these birds have little or no crest, and are thence supposed to be females. They inhabit Brasil and Guiana, where they are often made tame. They frequently make a noise not unlike the word *jacu*. Their flesh is much esteemed.

4. *PENELOPE MELEAGRIS SATYRA*, the horned pheasant. Latham calls it the horned turkey. This species is larger than a fowl, and smaller than a turkey. The colour of the bill is brown; the nostrils, forehead, and space round the eyes are covered with slender black hairy feathers; the top of the head is red. Behind each eye there is a fleshy callous blue substance like a horn, which tends backward. On the fore part of the neck and throat, there is a loose flap of a fine blue colour, marked with orange spots, the lower part of which is beset with a few hairs; down the middle it is somewhat looser than on the sides, being wrinkled. The breast and upper part of the back are of a full red colour. The neck and breast are inclined to yellow. The other parts of the plumage and tail are of a rufous brown, marked all over with white spots, encompassed with black. The legs are somewhat white, and furnished with a spur behind each. A head of this bird, Mr Latham tells us, was sent to Dr Mead from Bengal, together with a drawing of the bird, which was called *anpaul pheasant*. It is a native of Bengal. See plate CCLXX.

5. *PENELOPE PIPILE*, or *crax pipile*, is black in the belly, and the back brown, stained with black. The flesh on the neck is of a green colour. It is about the bigness of the yacou. (See N° 1.) and has a hissing noise. The head is partly black and partly white, and is adorned with a short crest. The space about the eyes, which are black, is white; the feet are red. It inhabits Guiana.

6. *PENELOPE VOCIFERANS*, the vociferating penelope. The bill of this bird is of a greenish colour: the back is brown, the breast green, and the belly is of a whitish brown. Latham calls it the *crying curassaw*. It is about the bigness of a crow.

PENEMUNDER, a fortress of Prussian Pomerania, in the isle of Usedom, at the mouths of the Pene and the Oder. Lon. 14. 10. E. Lat. 54. 16. N.

PENEO, a river of European Turkey, which runs into the Egean Sea, 20 miles E. of Larissa; anciently called PENEUS.

PENESTICA, a town of the Helvetii, between Lacus Laufonius and Salodurum; called PETENISCA by Peutinger; thought now to be BIEL, the capital of a small territory in Switzerland. *Antonine. Cluverius.*

* PENETRABILITY. *n. f.* [from *penetrable*.] Susceptibility of impression from another body.—
There

There being no mean between penetrability and impenetrability, passivity and activity, they being contrary. *Cheyne.*

* **PENETRABLE.** *adj.* [*penetrable*, Fr. *penetrabilis*, Lat.] 1. Such as may be pierced; such as may admit the entrance of another body.—

Pierce his only penetrable part. *Dryden.*
2. Susceptive of moral or intellectual impression.—

I am not made of stone,
But penetrable to your kind entreaties. *Shak.*
Let me wring your heart, for so I shall,
If it be made of penetrable stuff. *Shak.*
* **PENETRAIL.** *n. f.* [*penetralia*, Latin.] Interior parts. Not in use.—The heart resists purulent fumes, into whose penetrails to insinuate, some time must be allowed. *Harvey.*

PENETRALE, a sacred room or chapel in private houses, which was set apart for the worship of the household gods among the ancient Romans. In temples also there were *penetralia*, or apartments of distinguished sanctity, where the images of the gods were kept, and certain solemn ceremonies performed.

* **PENETRANCY.** *n. f.* [from *penetrant*.] Power of entering or piercing.—The subtilty, activity, and penetrancy of its effluvia, no obstacle can stop or repel. *Ray.*

* **PENETRANT.** *adj.* [*penetrant*, Fr.] Having the power to pierce or enter; sharp; subtle.—The ascending steams may easily be caught and reduced into a penetrant spirit. *Boyle.*—The food is evacuated into the intestines, where it is further subtilized, and rendered so fluid and penetrant, that the finer part finds its way in at the straight orifices of the lacteous veins. *Ray.*

(1.) * **To PENETRATE.** *v. a.* [*penetro*, Lat. *penetrer*, Fr.] 1. To pierce; to enter beyond the surface; to make way into a body.—Marrow is, of all other oily substances, the most penetrating. *Arbutnot.* 2. To affect the mind. 3. To reach the meaning.—There shall we clearly see the uses of these things, which here were too subtle for us to penetrate. *Ray.*

(2.) * **To PENETRATE.** *v. n.* 1. To make way.—Court virtues bear, like gems, the highest rate,
Born where heav'n's influence scarce can penetrate. *Pope.*

2. To make way by the mind.—If we reach no farther than metaphor, we are not yet penetrated into the inside and reality of the thing. *Lucke.*

* **PENETRATION.** *n. f.* [*penetration*, Fr. from *penetrare*.] 1. The act of entering into any body.—

It warms
The universe, and to each inward part,
With gentle penetration, though unseen,
Shoots invincible virtue. *Milton.*

2. Mental entrance into any thing abstruse.—A penetration into the abstruse difficulties and depths of modern algebra and fluxions, is not worth the labour of those who design either of the three learned professions. *Watts.* 3. Acuteness; sagacity.—The proudest admirer of his own parts might consult with others, though of inferior capacity and penetration. *Watts.*

* **PENETRATIVE.** *adj.* [from *penetrare*.] 1. Piercing; sharp; subtle.—Let not the air be too

gross, nor too penetrative. *Wotton.* 2. Acute; sagacious; discerning.—

O thou, whose penetrative wisdom found
The south sea rocks and shelves. *Savil.*

3. Having the power to impress the mind.—
His face subdu'd
To penetrative shame. *Shak.*

* **PENETRATIVENESS.** *n. f.* [from *penetrative*.] The quality of being penetrative.

PENEUS, a river which rises in Mount Pindus, and runs through the middle of Thessaly, from W. to E. into the Sinus Thermaicus, between Olympus and Ossa, near Tempe of Thessaly. *Ovid, Val. Flaccus, Strabo.*

(1.) * **PENGUIN.** *n. f.* [*anser magellanicus*, Lat.]

1. A bird. This bird was found with this name; as is supposed, by the first discoverers of America; and penguin signifying in Welsh a white head, and the head of this fowl being white, it has been imagined that America was peopled from Wales; whence *Hudibras* :—

British Indians nam'd from penguins.
—*Grew* gives another account of the name, deriving it from *pinguis*, Lat. *fat*; but is, I believe, mistaken.—The penguin is so called from his extraordinary fatness; for though he be no higher than a large goose, yet he weighs sometimes 16 lb.; his wings are extremely short and little, altogether useless for flight, but by the help whereof he swims very swiftly. *Grew's Museum.* 2. A fruit.—The penguin is very common in the West Indies, where the juice of its fruit is often put into punch, being of a sharp acid flavour: there is also a wine made of the juice of this fruit, but it will not keep good long. *Miller.*

(2.) **PENGUIN**, in botany (§ 1. *Def. 2.*), or **WILD ANANAS**, is a species of *Bromelia*. See *BROMELIA*.

(3.) **PENGUIN**, in ornithology. See **PINGVIN**.

(4.—6.) **PENGUIN**, or } in geography, 3 islands,
PENGUIN ISLAND, } so named from the birds:
viz. 1. near the Cape of Good Hope, a little N. of Table Bay: 2. near the coast of New Holland, at the entrance of Adventure Bay: 3. ten miles E. of the S. coast of Newfoundland. Lon. 56. 45. W. Lat. 50. 5. N.

(7, 8.) **PENGUIN ISLAND** and **BAY**, an island and bay of Patagonia, 182 miles N. of Port St Julian. Lat. 47. 48. N.

PENHA GARCIA, a town of Portugal, in Beira; 7 miles S. of Alfayates, and 9 E. of Castel Branco, Lon. 11. 57. E. Ferro. Lat. 39. 50. N.

PENICHE, a sea-port town of Portugal, with a fort, in Estremadura, on a peninsula in the Atlantic; containing 2800 inhabitants. It is 39 miles NNW. of Lisbon. Lon. 9. 5. E. Lat. 39. 16. N.

PENICILLUS, among surgeons, is used for a tent to be put into wounds or ulcers.

PENICK, a town of Upper Saxony, in Misnia, on the Mulde, 8 miles E. of Altenburg. Lon. 12. 44. E. Lat. 50. 59. N.

(1.) **PENJEKOREH**, a town of Asia, in Cabul; 8 miles W. of Mafhangur.

(2.) **PENJEKOREH**, a river of Asia, which runs into the Sewad, 5 miles S. of the town, N^o 1.

PENIEL, or **PENUEL**, a city beyond Jordan, near the ford or brook Jabbok, where Jacob wrestled with an angel. (See Gen. xxxii. 24, &c.) The city

city, built afterwards in this place, was given to the tribe of Gad. Gideon, returning from the pursuit of the Midianites, overthrew the tower of Peniel (Judges viii. 17.), and put all the men of the city to death, for having refused bread to him and his people, and having answered him in a very insulting manner. Jeroboam I. rebuilt Peniel (1 Kings xii. 25.); and Josephus says, that he built a palace in it.

PENIG, or } a town and lordship of Upper
PENICK, } Saxony, in Schonberg, with a pottery and woollen manufacture; 38 miles W. of Dresden, and 28 SSE. of Leipzig.

PENINGTON, Isaac, a celebrated English Quaker, born in 1617. He was an early convert of George Fox; and both preached and wrote in defence of his system. Under the persecuting spirit of that age, he was several times imprisoned; although he was of a meek, quiet, and philanthropic spirit, and very much beloved. He died at Goodnestone in Suffex, in 1679.

PENINNAH, the second wife of Elkanah, the father of Samuel. Her fertility, and Hannah's barrenness, are recorded in 1 Sam. i.; with several interesting circumstances, which show the folly and inconvenience of polygamy.

(1.) * PENINSULA. *n. f.* [Lat. *pene insula*; *peninsule*, Fr.] A piece of land almost surrounded by the sea, but joined by a narrow neck to the main.—A side of Milbrook lieth the *peninsula* of Infwork. *Carew.*

(2.) PENINSULA. See Plate CLXIV.

* PENINSULATED. *adj.* [from *peninsula*.] Almost surrounded by water.

PENIS. See ANATOMY, § 312.

PENISCOLA, a town of Spain, in Valencia, on a high promontory, surrounded on 3 sides by the Mediterranean; 60 miles N. of Valencia, and 195 E. of Madrid. Lon. 1. o. E. Lat. 40. 29. N.

PENISHEHR, a town of Afia, in Cabul, 46 miles N. of Cabul. Lon. 68. 24. E. Ferro. Lat. 35. 16. N.

(1.) * PENITENCE. *n. f.* [*penitence*, Fr. *penitentia*, Lat.] Repentance; sorrow for crimes; contrition for sin, with amendment of life or change of the affections.—

Death is *deferred*, and *penitence* has room

To mitigate, if not revise the doom. *Dryden.*

(2.) PENITENCE is sometimes used for a state of repentance, and sometimes for the act of repenting. See REPENTANCE. It is also used for a discipline or punishment attending repentance, more usually called Penance. It also gives title to several religious orders, consisting either of converted debauchees and reformed prostitutes, or of persons who devote themselves to the office of reclaiming them. Of this latter kind are these:

(3.) PENITENCE OF ST MAGDALEN, AT PARIS, CONGREGATION of, owed its rise to the preaching of F. Tifferan, a Franciscan, who converted a number of courtizans about the year 1493. Louis duke of Orleans gave them his house for a monastery, or rather, as appears by their constitutions, Charles VIII. gave them the hotel called the *Bocbaigne*, whence they were removed to St George's chapel, in 1572. By virtue of a brief of Pope Alexander, Simon, bishop of Paris, in 1497, drew them up a body of statutes, and gave them the rule of St Au-

gustine. It was necessary, before a woman could be admitted, that she had first committed the sin of the flesh. None were admitted who were above 35 years of age. Till the beginning of the last century, none but penitents were admitted; but since its reformation by Mary Alvequin, in 1616, none have been admitted but maids, who, however, still retain the ancient name penitents.

(4.) PENITENCE OF ST MAGDALEN, ORDER of, established about the year 1272 by one Bernard, a citizen of Marseilles, who devoted himself to the work of converting the courtizans of that city. Bernard was seconded by several others, who, forming a kind of society, were at length erected into a religious order by Pope Nicholas III. under the rule of St Augustine. F. Gelnay says, that they also made a religious order of the penitents, or women they converted, giving them the same rules and observances which they themselves kept.

(1.) * PENITENT. *adj.* [*penitens*, Lat.] Repentant; contrite for sin; sorrowful for past transgressions, and resolutely amending life.—

Much it joys me

To see you become so *penitent*. *Shak.*

Nor in the land of their captivity
Humbled themselves, or *penitent* besought
The God of their forefathers. *Milton.*

Provoking God to raise them enemies;
From whom as oft he saves them *penitent*. *Milt.*
The proud he tam'd, the *penitent* he cheer'd.

Dryden.

(2.) * PENITENT. *n. f.* 1. One sorrowful for sin.—Concealed treasures shall be brought into use by the industry of converted *penitents*. *Bacon.*—The *penitent* conquers the temptations of sin in their full force. *Rogers.* 2. One under censure of the church, but admitted to penance.—The catechumens and *penitents* were admitted to the lessons and psalms, and then excluded. *Stillingfleet.* 3. One under the direction of a confessor.

(3.) PENITENTS, an appellation given to certain fraternities of penitents, distinguished by the different shape and colour of their habits. These are secular societies, who have their rules, statutes, and churches, and make public processions under their particular crosses or banners. Of these there are more than 100; the chief of which are, 1. The *white penitents*, of which there are several different sorts at Rome, the most ancient of which was constituted in 1264: the brethren of this fraternity every year give portions to a certain number of young girls, in order to their being married: their habit is a kind of white sackcloth, and on the shoulder is a circle, in the middle of which is a red and white cross. 2. *Black penitents*, the chief of which are the brethren of mercy, instituted in 1488 by some Florentines, to assist criminals during their imprisonment, and at their death: on the day of execution they walk in procession before them, singing the 7 penitential psalms and the litanies; and after they are dead, they take them down from the gibbet and bury them: their habit is black sackcloth. There are others whose business it is to bury such persons as are found dead in the streets: these wear a death's head on one side of their habit. There are also *blue*, *grey*, *red*, *green*, and *violet penitents*; remarkable for little

little else but the different colours of their habits. Mabillon tells us, that at Turin there are a set of penitents kept in pay to walk through the streets in procession, and cut their shoulders with whips, &c.

(4.) **PENITENTS, OR CONVERTS OF THE NAME OF JESUS**, a congregation of religious at Seville in Spain, consisting of women who had led a licentious life, founded in 1550. This monastery is divided into three quarters: one for professed religious; another for novices; a third for those who are under correction. When these last give signs of a real repentance, they are removed into the quarter of the novices, where, if they do not behave themselves well, they are remanded to their correction. They observe the rules of St Augustine.

(5.) **PENITENTS OF ORVIETO**, are an order of nuns, instituted by Antony Simoncelli, a gentleman of Orvieto in Italy. The monastery he built was at first designed for the reception of poor girls, abandoned by their parents, and in danger of losing their virtue. In 1663 it was erected into a monastery, for the reception of such as, having abandoned themselves to impurity, were willing to consecrate themselves to God by solemn vows. Their rule is that of the Carmelites. These religious undergo no novitiate. All required is, that they continue a few months in the monastery in a secular habit; after which they are admitted to the vows.

(1.) * **PENITENTIAL**. *adj.* [from *penitence*.] Expressing penitence; enjoined as penance.—

I have done penance for contemning love,
Whose high imperious thoughts have punish'd me

With bitter fasts and penitential groans. *Shak.*

—Is it not strange, that a rational man should adore leeks and garlick, and shed penitential tears at the smell of a desired onion? *South.*

(2.) * **PENITENTIAL**. *n. f.* [*penitenciel*, Fr. *penitential*, low Latin.] A book directing the degrees of penance.—The penitentials, or book of penance, contained such matters as related to the imposing of penance, and the reconciliation of the person that suffered penance. *Ayliffe.*

(3.) **PENITENTIAL**. See **PENANCE**. There are various penitentials, as the Roman penitential, that of the venerable Bede, that of Pope Gregory III. &c.

(1.) * **PENITENTIARY**. *n. f.* [*penitencier*, Fr. *penitenciaris*, low Latin.] One who prescribes the rules and measures of penance.—Upon the loss of Urbin, the duke's undoubted right, no penitentiary, though he had enjoined him never to strict penance to expiate his first offence, would have counselled him to have given over pursuit of his right, which he prosperously re-obtained. *Bacon.*—The great penitentiary with his counsellors prescribes the measure of penance. *Ayliffe's Parergon.* 2. A penitent; one who does penance.—A prison restrained John Northampton's liberty, who, for abusing the same in his unruly mayoralty of London, was condemned hither as a perpetual penitentiary. *Carew.*—To maintain a painful fight against the law of sin, is the work of the penitentiary. *Hammond.* 3. The place where penance is enjoined. *Ainsworth.*

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(2.) **PENITENTIARY**, in the ancient Christian church, a name given to certain presbyters or priests, appointed in every church to receive the private confessions of the people, in order to facilitate public discipline, by acquainting them what sins were to be expiated by public penance, and to appoint private penance for such private crimes as were not proper to be publicly censured.

(3.) **PENITENTIARY**, at the court of Rome, is an office in which are examined and delivered out the secret bulls, graces, or dispensations, relating to cases of conscience, confessions, &c.

(4.) **PENITENTIARY** is also an officer, in some cathedrals, vested with power from the bishop to absolve, in cases reserved to him. The pope has his grand penitentiary, who is a cardinal, and the chief of the other penitentiary priests established in the church of Rome, who consult him in all difficult cases. He presides in the penitentiary, dispatches dispensations, absolutions, &c. and has under him a regent and 4 preceptors, or advocates of the sacred penitentiary.

* **PENITENTLY**. *adv.* [from *penitent*.] With repentance; with sorrow for sin; with contrition.

PENK, a river of Staffordshire, which runs into the Sow, a mile below Stafford.

PENKEMAS, a cape on the W. coast of Wales, and N. point of Pembrokehire, at the mouth of the Tivy, 4 miles below Cardigan.

* **PENKNIFE**. *n. f.* [*pen and knife*.] A knife used to cut pens.—Some schoolmen, fitter to guide penknives than swords, precisely stand upon it. *Bacon.*—We might as soon sell an oak with a penknife. *Hobday.*

PENKRIDGE, a town of Staffordshire, formerly large, but now much reduced, and chiefly noted for its horse fairs, and a market on Tuesday. It is 6 miles S. of Stafford, and 129 NW. of London. Lon. 2. 0. W. Lat. 52. 54. N.

PENKUM. See **PENCRUM**.

PENLAU LENGAU, a river of Austria, which runs from lake Alben into the Traun; 4 miles SW. of Wells.

PENLEE, a point or cape in the English Channel, on the S. coast of Cornwall, W. of the entrance into Plymouth Sound.

PENMAEN-MAWR, or } a mountain in Caer-
PENMAN-MAWR, } narvonshire, 1400 feet high. It hangs perpendicularly over the sea, at so vast a height, that few spectators are able to look down the dreadful steep.

* **PENMAN**. *n. f.* [*pen and man*.] 1. One who professes the act of writing. 2. An author; a writer.—The further consideration of these holy penmen will fall under another part of this discourse. *Addison.*—The descriptions which the evangelists give, shew that both our blessed Lord and the holy penmen of his story were deeply affected. *Atterb.*

(1.) **PENMARCH**, a point or cape of France, on the W. coast, S. of Audierne bay; 15 miles SSE. of Audierne, and 18 SW. of Quimper. Lon. 13. 10. E. Ferro. Lat. 47. 46. N.

(2.) **PENMARCH ROCKS**, rocks or small islets near the W. coast of France, and SE. coast of the department of Finistère; E. of the above cape.

(1.) **PENN**, Sir William, was born at Bristol in 1621, and inclined from his youth to maritime affairs. He was made captain at 21 years of age, rear-

real-admiral of Ireland at 23, vice-admiral of Ireland at 25, admiral to the Straits at 29, vice-admiral of England at 31, and general in the first Dutch war at 32. Returning in 1665, he was chosen representative for the town of Weymouth; and in 1660 was made commissioner of the admiralty and navy, governor of the town and fort of Kintale, vice-admiral of Munster, and a member of that provincial council. In 1664, he was chosen great captain commander under the duke of York, and distinguished himself in an engagement against the Dutch fleet; after which he took leave of the sea, but continued in his other employments till 1669. He died in 1670.

(2.) PENN, William, an eminent writer among the Quakers, and the founder and legislator of Pennsylvania, was the son of Sir William Penn, and was born at London in 1644. In 1660, he was entered a commoner of Christ-church in Oxford; but, having previously received an impression from the preaching of one Thomas Lee a Quaker, withdrew with some other students from the national worship, and held private meetings, where they preached and prayed among themselves. This giving great offence to the heads of the college, Mr Penn, though but 16 years of age, was fined for nonconformity; and continuing his religious exercises, was at length expelled his college. Upon his return home, he was treated with great severity by his father, who at last turned him out of doors; but his repentment abating, he sent him to France in company with some persons of quality; where he continued a considerable time, and returned not only well skilled in the French language, but a polite and accomplished gentleman. About 1666, his father committed to his care a considerable estate in Ireland. But being found in one of the Quakers meetings in Cork, he, with many others, was thrown into prison: on his writing to the earl of Orrery, however, he was soon discharged. But his father, being informed that he still adhered to his opinions, sent for him to England, and finding him inflexible to all his arguments, turned him out of doors a second time. About 1668, he became a public preacher among the Quakers; and that year was committed close prisoner to the Tower, where he wrote several treatises. Being discharged after 7 months imprisonment, he went to Ireland, where he also preached amongst the Quakers. Returning to England, he was in 1670 committed to Newgate, for preaching in Gracechurch-street meeting-house, London; but being tried at the sessions-house in the Old Bailey, he was acquitted. In Sept. 1670 his father died: and being perfectly reconciled to him, left him his paternal blessing and a plentiful estate. But his persecutions were not yet at an end; for in 1671 he was committed to Newgate for preaching at a meeting in Wheeler-street, London; and during his imprisonment, which continued six months, he wrote several treatises. After his discharge, he went into Holland and Germany; and in the beginning of 1672 married, and settled with his family at Rickmansworth in Hertfordshire. The same year he published several pieces; particularly one against Reeves and Muggleton. In 1677, he again travelled into Ireland and Germany to propagate his opinions;

and had frequent conversations with the princess Elizabeth, daughter to the queen of Bohemia, and sister to the princess Sophia, mother to K. George I. In 1681, K. Charles II. in consideration of the admiral's services, and several debts due to him from the crown at his decease, granted William Penn and his heirs the province lying on the W. side of the Delaware, which thence obtained the name of PENNSYLVANIA. Upon this Penn published a brief account of that province, with the king's patent; and proposing an easy purchase of lands, and good terms of settlement for such as were inclined to remove thither, many went over. But Penn, justly considering, that no European sovereign had a right to dispose of the property of other nations, however savage, without some compensation, appointed commissioners to purchase the land he had received from the king of the native Indians, and concluded a treaty with them. The city of Philadelphia was planned and built; and he himself drew up the fundamental constitutions of Pennsylvania in 24 articles. In 1681, he was elected F. R. S. and in 1682 he embarked for Pennsylvania, where he continued about two years, and returned to England in August 1684. Upon the accession of King James II. he was taken into a great degree of favour, which exposed him to the imputation of being a Papist; but from which he fully vindicated himself. However, upon the Revolution, he was examined before the council in 1688, and obliged to give security for his appearance on the first day of next term, which was afterwards continued. He was several times discharged and examined; and at length warrants being issued out against him, he was obliged to conceal himself for two or three years. Being at last permitted to appear before the king and council, he represented his innocence so effectually that he was acquitted. In August 1699, he, with his wife and family, embarked for Pennsylvania; whence he returned in 1701, to vindicate his proprietary right, which had been attacked during his absence. Upon Q. Anne's accession, he was in great favour, and was often at court. But, in 1707, he was involved in a lawsuit with the executors of a person who had been formerly his steward; and, though many thought him aggrieved, the court of chancery did not relieve him; upon which account he was obliged to live within the rules of the Fleet for several months, till the matter in dispute was accommodated. He died in 1718. Penn's friendly and pacific manner of treating the Indians produced in them an extraordinary love for him and his people; so that they have maintained a perfect amity with the Anglo-Americans in Pennsylvania ever since. He was the greatest bulwark of the Quakers; in whose defence he wrote numberless pieces. Besides the above works, he wrote a great number of others: the most esteemed of which are, 1. Primitive Christianity revived. 2. Defence of a paper, intitled *Gospel Truths, against the Exceptions of the Bishop of Cork*. 3. Persuasive to Moderation. 4. Good Advice to the Church of England, Roman Catholic, and Protestant Dissenters. 5. The Sandy Foundation shaken. 6. No Cross, no Crown. 7. The great Case of Liberty of Conscience debated. 8. The Christian Quaker, and his Testimony

Testimony stated and vindicated. 9. A discourse of the general Rule of Faith and Practice, and Judge of controversy. 10. England's Present Interest considered. 11. An Address to Protestants. 12. Reflections and Maxims. 13. Advice to his Children. 14. Rise and Progress of the People called *Quakers*. 15. A Treatise on Oaths. Most of these have passed through several editions, some of them many. The letters between William Penn and Dr Tillotson, and William Penn and William Popple, Esq. together with Penn's letters to the princess Elizabeth of the Rhine, and the countess of Hornes, as also one to his wife on his going to Pennsylvania, are inserted in his works, which were first collected and published in 2 vols. folio; and the parts since selected and abridged into 1 vol. folio, are very much and deservedly admired for the good sense they contain.

(3.) PENN, FORT, a fort of Pennsylvania, in Northampton county, at the mouth of a small river, which runs into the Delaware on the W. side; 70 miles N. of Philadelphia.

(1.) PENNA, in zoology. See PINNA.

(2.) PENNA DI BILLI, a town of Italy, in Urbino; 11 miles SW. of St Marino, and 14 WNW. of Urbino.

* PENNACHED. *adj.* [*pennachè*, Fr.] Applied to flowers when the ground of the natural colour of their leaves is radiated and diversified neatly without any confusion. *Trevoux*.—Carefully protect from violent rain your *pennached* tulips, covering them with matresses. *Evelyn*

(1.) PENNAFLOR, a town of Spain, in Andalusia; 10 miles N. of Exjia, near the Xenil. Lon. 4. 12. W. Lat. 37. 44. N.

(2.) PENNAFLOR, a town of Spain, in Asturias, on the Asta; 14 miles SW. of Oviedo. Lon. 5. 56. W. Lat. 43. 15. N.

(1.) PENNANT, Thomas, Esq. LL. D. F. R. S. &c. a late eminent English naturalist, born in Flintshire, in 1726, and descended of a race of ancient Britons, who had settled in that country for many centuries. He was educated successively at Wrexham, Fulham, and Oxford, where he graduated; and having made considerable proficiency in the classics, for some time studied law. About this time, a present of *Willoughby's Ornithology*, gave him an attachment to Natural History, which continued through life. After making a tour through Wales, Cornwall, and other parts of England, he travelled to the continent, and established a correspondence with several of the greatest men of the age, particularly Count Buffon, Dr Pallas, Dr Haller, Linnaeus, and Voltaire. On his return, he married, and had two children; but did not succeed to the family fortune till his 37th year, when he settled at Downing. His wife dying, he made another tour to the continent; where his reputation as a man of science was now established by his *British Zoology*; which was published in 4 vols. 4to, so early as 1750. About 1770, he set out on his Travels through Scotland; and, in 1771, published a most entertaining account of that Tour, in 3 vols. 4to, which gave universal satisfaction, and passed through several editions. After this tour, he penetrated to the Hebrides, and visited Man. In 1776, he married his 2d wife, Miss Mostyn, sister of Sir

Roger Mostyn. In 1778, he commenced the publication of his *Welch Tour*, in 2 vols. 4to. In 1782, he published his *Journey from Chester to London*, in one vol. 4to; and in 1784, his *Arctic Zoology*, an admirable work, highly esteemed both at home and abroad. In 1790, he published another 4to vol. entitled *Of London*; and with it a *farewell address* to the public; notwithstanding which, he soon after published *The Natural History of the parishes of Holywell and Downing*; in one vol. 4to. And even so late as 1797, his 71st year, he published *The View of Hindoostan*, a splendid work, in 2 vols. 4to, with 23 plates, admirably engraved. From his apology in the preface, these 2 vols. appear to be only part of a work of which the remaining vols. may still be expected to be published. He also published the following papers in the *Philos. Trans.* 1. A Letter on an earthquake felt at Downing in 1753: 2. Another on Coralloid Bodies, (*coralloides*), collected by him; and 3. Synopsis of Quadrupeds, 1771: 4. A pamphlet on the Militia: 5. A paper on the Turkey; and, 6. A vol. of Miscellanies. Besides being F. R. S. of London, he was a member of the Society of Antiquaries; F. R. S. of Upsal, in Sweden; a member of the American Philosophical Society, and of the Anglo-Linnæan Society, &c. His ample fortune enabled him to keep a hospitable table; and to dedicate the profits of several of his works to charitable institutions; particularly the Welch Charity School. He died at Downing in 1798, aged 72. He left several works in MS. entitled *Outlines of the Globe*, of which, the View of Hindoostan composed the 14th and 15th vols. He was endued with a healthy frame of body, an open and intelligent aspect, an active and cheerful disposition, and great vivacity. His heart was kind, benevolent, and charitable. He was candid and free from prejudices; and Scotland will ever venerate him, as the first traveller from the S. side of the Tweed, who visited her, with no unfriendly spirit.

(1.) * PENNANT. *n. f.* [*pennon*, Fr.] 1. A small flag, ensign or colours. 2. A tackle for hoisting things on board. *Ainsworth*.

PENNAQUID, a cape of the United States, on the coast of Maine. Lon. 69. 27. W. Lat. 43. 47. N.

PENNAR, a river of Hindoostan, which rises in Mysore; crosses the circar of Cuddapa and the Carnatic; and after watering Gooty, Gandicotta, Vellore, &c. falls into the bay of Bengal at Gangapatam, 12 miles E. of Nellore.

PENNARE, a cape in the English Channel, on the S. coast of Cornwall; 6 miles WSW. of Deadman's Point.

(1.) PENNARTH BAY, a bay of Wales on the S. coast, in the Severn, at the mouth of the Tave below Cardiff.

(2.) PENNARTH POINT, a cape of Wales, which bounds Pennarth Bay on the S.

* PENNATED. *adj.* [*pennatus*, Latin.] 1. Winged. 2. *Pennated*, amongst botanists, are such leaves of plants as grow directly one against another on the same rib or stalk; as those of ash and walnut-tree. *Quincy*.

PENNATULA, the SEA PEN, in natural history, a genus of zoophyte, which, though it swims

about freely in the sea, approaches near to the gorgonia. This genus hath a bone along the middle of the infide, which is its chief support; and this bone receives the supply of its offensive matter by the same polype mouths that furnish it with nourishment. Linnæus reckons 7 species. See ZOOPHYTES. It partakes both of the animal and vegetable nature; but some suppose it to be nothing but a fungus or sea plant. It is certainly an animal, however, and as such is locomotive. Its body generally expands into processes on the upper parts, and these processes or branches are furnished with rows of tubular denticles; they have a polype head proceeding from each tube. The sea pen is distinguished from the corallines by this specific difference; corals, corallines, alcyonia, and all that order of beings, adhere firmly by their bases to submarine substances; but the sea pen either swims about in the water, or floats upon the surface. But there are other kinds of sea pens, or species of this animal, which have no resemblance to a pen: as,

1. PENNATULA DIGITALIS, or DIGITI-FORMIS, the finger-shaped sea pen. See fig. 8. pl. 172.

2. PENNATULA FILOSA of Linnæus. See fig. 5.

3. PENNATULA MIRABILIS. See fig. 7.

4. PENNATULA PAVONIS PISCIS, the feather of the peacock fish. See fig. 4.

5. PENNATULA PHOSPHOREA. Dr Coote Moleworth sent one of these animals to the Ingenious Mr Ellis, the author of many curious papers on the nature of corallines, which was taken in a trawl in 72 fathoms water, near the harbour of Brest, in France: the same species are frequently found in the ocean from the coast of Norway to the Mediterranean sea, sometimes at considerable depths, and sometimes floating on the surface. Mr Ellis describes that sent him, as follows: Its general appearance greatly resembles that of a quill feather of a bird's wing; (see Plate CCLXXII. fig. 1.); it is about 4 inches long, and of a reddish colour; along the back there is a groove from the quill part to the extremity of the feathered part, as there is in a pen; the feathered part consists of fins proceeding from the stem, as expressed in the figure. The fins move the animal backward and forward in the water, and are furnished with suckers or mouths armed with filaments, which appear magnified as fig. 2. There is no perforation at the bottom, and therefore Mr Ellis is of opinion, that the exuvise of the animals upon which it feeds are discharged by the same apertures at which the food is taken in; and in this it is not singular, the same economy being observed in the Greenland polype, described by Mr Ellis in his Essay on Corallines. Each sucker has eight filaments, which are protruded when prey is to be caught; but at other times they are drawn back into their cases, which are furnished at the end with *spicula* that close together round the entrance, and defend this tender part from external injuries. Dr Bohadsch of Prague had an opportunity of observing one of these animals alive in the water, and he gives the following account of what he saw: "A portion of the stem contracted, and became of a strong purple colour, so as to have the appearance of a ligature round it; this apparent ligature, or zone, moved

upwards and downwards successively through the whole length of the stem, as well the feathered as the naked part; it began at the bottom, and moving upwards to the other extremity, it there disappeared, and at the same instant appeared again at the bottom, and ascended as before; but as it ascended through the feathered or pinnated part, it became paler. When this zone is much contracted, the trunk above it swells, and acquires the form of an onion; the contraction of the trunk gives the colour to the zone, for the intermediate parts are paler in proportion as the zone becomes deeper. The end of the naked trunk is sometimes curved like a hook; and at its extremity there is a sinus or chink, which grows deeper while the purple ring is ascending, and shallower as it is coming down. The fins have four motions, upward and downward, and backward and forward, from right to left, and from left to right. "The fleshy filaments, or claws, move in all directions: and, with the cylindrical part from which they proceed, are sometimes protruded from the fins, and sometimes hidden with them. Upon dissecting this animal, the following phenomena were discovered. When the trunk was opened lengthwise, a saltish liquor flowed out of it, so viscid as to hang down an inch. The whole trunk of the stem was hollow, the outward membrane being very strong, and about a tenth part of an inch thick: within this membrane appeared another much thinner; and between these two membranes, in the pinnated part of the trunk, innumerable little yellowish eggs, about the size of a white poppy seed, were seen floating in a whitish liquor; about three parts of the cavity within the inner membrane is filled by a kind of yellowish bone: this bone is about $2\frac{1}{2}$ inches long, and $\frac{1}{8}$ of an inch thick; in the middle it is four-square, but towards the ends it grows round and very taper, that end being finest which is next the pinnated part of the trunk. This bone is covered in its whole length with a clear yellowish skin, which at each end runs out into a ligament; one is inserted in the top of the pinnated trunk, and the other in the top of the naked trunk: by the help of the upper ligament, the end of the bone is either bent into an arch, or disposed into a straight line. The fins are composed of two skins; the outward one is strong and leathery, and covered over with a vast number of crimson streaks; the inner skin is thin and transparent; the suckers are also in the same manner composed of two skins, but the outward skin is something softer. Both the fins and suckers are hollow, so that the cavity of the suckers may communicate with those of the fins, as the cavity of the fins does with that of the trunk. Dr Shaw, in his *History of Algiers*, says, that these animals are so luminous in the water, that in the night the fishermen discover fishes swimming about in various depths of the sea by the light they give: From this extraordinary quantity, Linnæus calls this species of the sea pen, *pennatula phosphorea*, and remarks, after giving the synonymics of other authors, *Habitat in oceanum fundum illuminans*. Of all the pennatulae yet known, this feather-shaped one, or as it is called by others, the *silver sea pen* (fig. 1.), is the largest,

as well as the most specious in its appearance. It is of a beautiful silvery white, elegantly striated on each of the feather-like processes with lines or streaks of the deepest black. It is very rare, and is a native of the Indian seas. There is a very fine specimen of this species in the British Museum.

6. *PENNATULA RENIFORMIS*, the kidney-shaped sea pen. See fig. 3. The kidney-shaped sea pen was discovered some time ago on the coast of South Carolina, and sent to Mr Ellis by John Gregg, Esq. of Charlestown. It is of a fine purple colour; the kidney part is about an inch from end to end, and about half an inch wide in the narrowest part; a tail proceeds from the middle of the body, which is roundish, and about an inch long; is also full of rings like an earth worm, and along the middle both of the upper and under part of it there is a small groove which runs from one end to the other, but there is no perforation at either extremity. The upper part of the body is convex, and about an inch thick; the whole surface is covered with small yellow starry openings, through which little suckers are protruded, each furnished with six tentacula, or filaments, like what are observed on some corals; the under part of the body is quite flat, and is full of ramifications of fleshy fibres, which, proceeding from the insertion of the tail, as a common centre, branch out so as to communicate with the starry openings on the exterior edge and upper surface of the animal.

7. *PENNATULA SAGITTA*, the arrow pennatula. See fig. 6.

(1.) PENNE, a town of France, in the dep. of Lot and Garonne; $4\frac{1}{2}$ miles E. of Villeneuve, and $7\frac{1}{2}$ W. of Tournon.

(2.) PENNE, a town of France, in the dep. of Tarn; $13\frac{1}{2}$ miles NNW. of Gaillac, and 21 NW. of Alby.

PENNELHEUGH, a hill of Roxburghshire, in Crailing parish; on the top of which are relics of a strong camp.

* PENNER. *n. f.* [from *pen*.] 1. A writer.

2. A pen-case. *Ainsl.* So it is called in Scotland.

PENNERVAEN, a mountain of S. Wales, in Brecknockshire, a little S. of Brecknock.

PENNEWANG, a town of Germany, in Austria; 3 miles N. of Schwanstadt.

(1.) PENNI, John Francis, born at Florence in 1488, was the disciple of Raphael, who observing his genius and integrity, intrusted his domestic concerns entirely to his management; by which means he got the appellation of *il fattore*, or *the steward*. His genius was universal; but his greatest pleasure was in painting landscapes and buildings: he was an excellent designer, and coloured well in oil, distemper, and fresco. He painted portraits exquisitely, and had such happy talents, that Raphael left him heir to his fortune, in partnership with Romano his fellow disciple. Penni died at Naples in 1528.

(2.) PENNI, Luke, brother of the above, worked at Genoa and other parts of Italy, with Del Vaga, who married his sister; he went thence to England, where he worked for Henry VIII. and was employed by Francis I. at Fontainebleau; but at last devoted himself to engraving.

* PENNILESS. *adj.* [from *penny*.] Moneyless; poor; wanting money.

PENNINÆ ALPES, a division of the Alps (*Liv.* xxi. 38.) See ALPS, § 1.

PENNINGHAM, a parish of Scotland, in Wigtownshire, 16 miles long from E. to W. and from S. to 64 broad. It is watered by the Cree; the soil is various, but in many parts very fertile. The population, in 1791, was 4000, increase 492, since 1755. The number of sheep was 9840.

(1.) PENNINGTON, a town of New Jersey, in Huntingdon county, 5 miles N. of Trenton, and 36 NE. by N. of Philadelphia.

(2, 3.) PENNINGTON, two small towns of England: 1. in Hampshire, near Ringwood: 2. in Lancashire, near Ulverton.

(1.) * PENNON. *n. f.* [*pennon*, Fr.] A small flag or colour.—

They waved like a pennon wide dispred.

Spenser.

Harry sweeps through our land
With pennons painted in the blood of Harleue.

Shak.

High on his pointed lance his pennon bore,
His Cretan fight, the conquer'd Minotaur.

Dryden.

(2.) PENNON, a fort of Algiers, on an island before the harbour of that city.

(3.) PENNON DE VELEZ, a sea port of Barbary, seated on a rock, in the Mediterranean, near Velez. It has a good harbour, and belongs to Spain. It is 75 miles E. of Ceuta. Lon. 4. o. W. Lat. 35. 25. N.

(1.) PENNSBOROUGH, a township of Pennsylvania, in Chester county.

(2.) PENNSBOROUGH, EAST, } two townships
(3.) PENNSBOROUGH, WEST, } of Pennsylvania, in Cumberland county.

PENNSBURY, a town of Pennsylvania, in Bucks county, on a creek of the Delaware; memorable for being the manor which the celebrated William Penn reserved to himself. Here he built a house, and planted gardens and orchards; which, with a great number of additional buildings, still continue.

(1.) PENNSYLVANIA, one of the 17 United States of North America. It was founded by William Penn, the celebrated Quaker, in 1679. (See PENN, N° 1.)

(1.) PENNSYLVANIA, BOUNDARIES AND EXTENT OF. This State is bounded on the N. by New York and Lake Erie: E. by the Delaware river and bay, which separate it from New Jersey; S. by part of Virginia, Maryland, and Delaware; W. by part of Virginia, and the North Western Territory, and NW. by part of Lake Erie. It lies in the form of a parallelogram; and comprehends 44,900 square miles; being 288 miles long from E. to W. and 156 broad from N. to S. Lon. from 74. 48. to 80. 8. W. Lat. from 39. 43. to 42. o. N.

(3.) PENNSYLVANIA, CLIMATE AND GENERAL APPEARANCE OF. The air is sweet and clear. Autumn begins about the 20th Oct. and lasts till the beginning of Dec. when winter sets in, which continues till March, and is sometimes extremely cold and severe; but the air is generally dry and healthy. The Delaware, though very broad,

is often frozen over. From March to June, (that is, in spring,) the weather is more inconstant than in the other seasons. In July, August, and Sept. the heats would be intolerable, if they were not mitigated by frequent cool breezes. The wind, during summer is generally SW.; but in winter blows for the most part from the NW. over the snowy mountains and frozen lakes of Canada, which occasions the excessive cold during that season. On the whole, the climate of this state differs not materially from that of Connecticut, except that on the W. side of the mountains the weather is much more regular. The inhabitants never feel those quick transitions from cold to heat, by a change of the wind from N. to S. as these so frequently experience who live E. of the mountains and near the sea. The hot S. winds get chilled by passing over the long chain of Allegany mountains. Among the Quakers, who are the oldest settlers, there are instances of longevity, occasioned by their temperance and mode of living. There are fewer long-lived people among the Germans than among other nations, occasioned by their excess of labour and low diet, as they live chiefly upon vegetables and watery food. The surface of the country, towards the coast, is flat, but rises gradually to the Apalachian mountains on the W. Nearly one third of this state is mountainous; particularly the counties of Bedford, Huntingdon, Cumberland, part of Franklin, Dauphin, and part of Bucks and Northampton, through which pass, under various names, the numerous ridges and spurs, which collectively form *the great range of Allegany mountains*. There is a remarkable difference between the country on the E. and W. side of these mountains. Between these mountains and the lower falls of the rivers which run into the Atlantic, are several ranges of stones, sand, earths, and minerals, in the utmost confusion. Beds of stone, of vast extent, particularly of limestone, have their several layers broken in pieces, and the fragments thrown confusedly in every direction. Between these lower falls and the ocean is a very extensive collection of sand, clay, mud, and shells, partly thrown up by the waves of the sea, partly brought down by floods from the upper country, and partly produced by the decay of vegetable substances. The country W. of the Allegany mountains in these respects, is totally different. It is very irregular, broken, and variegated, but there are no mountains; and when viewed from the most western ridge of the Allegany, it appears to be a vast extended plain. All the various strata of stone appear to have lain undisturbed in the situation wherein they were first formed. The layers of clay, sand, and coal, are nearly horizontal. Scarcely a single instance is to be found to the contrary. Every appearance, in short, tends to confirm the opinion, that the original crust in which the stone was formed has never been broken up on the W. side of the mountains, as it evidently has been eastward of them.

(4.) PENNSYLVANIA. DIVISIONS OF. This State is divided into 23 counties; viz: Philadelphia, Chester, Delaware, Bucks, Montgomery, Berks, Lancaster, Dauphin, Northampton, Luzerne, York, Cumberland, Northumberland,

Franklin, Bedford, Huntingdon, Mifflin, Westmoreland, Somerset, Fayette, Washington, Alleghany, and Lycoming. These counties are subdivided into a great number of townships.

(5.) PENNSYLVANIA, GOVERNMENT AND CONSTITUTION OF. The present Constitution of this State was ratified June 12th 1792. By it, the supreme executive power is vested in a governor; the legislative in a general assembly, consisting of a senate, and a house of representatives. The governor is elected for 3 years, but cannot be continued longer than 9. A majority of votes decides the election. The representatives are chosen for one year; the senators for 4. The latter are divided into 4 classes, of which one goes out each year, and their seats are filled by new elections. Each county elects its own representatives. The senators are elected in districts formed by the legislature. Once in 7 years there is to be an enumeration of the citizens. The number of senators and representatives is to be fixed after each enumeration, by the legislature; and apportioned to the population of the several counties and districts, according to the number of taxable citizens. There can be no fewer than 60, nor more than 100 representatives. The number of Senators cannot be less than one 4th, or greater than one 3d of the representatives. The elections are made on the 2d Tues. of Oct. The General Assembly meets annually on the 1st Tues. of Dec. unless convened earlier by the governor. A majority of each house makes a quorum to do business; and a less number may adjourn from day to day, and compel members to attend. Each house chooses its speaker and other officers; judges of the qualifications of its members, and fixes the rules of its proceedings. Impeachments are made by the House of Representatives and tried by the Senate. All bills for raising revenue must originate in the Lower House, but the Senate may propose amendments. The Senators and representatives are free from arrests, while attending the public business; except in cases of treason, felony, and breach of the peace; and are not liable to be questioned respecting anything said in public debate. They are compensated out of the public treasury, from which no money can be drawn, but in consequence of appropriation by law. The journals of both houses are published weekly, and their doors kept open, unless the business requires secrecy. All bills which have passed both houses, must be presented to the governor. If he approve he must sign them; if not, he must return them within 10 days, with his objections, to the house in which they originated. No bill so returned shall become a law, unless it be re-passed by two 3ds of both houses. The governor is commander in chief of the military force; he may remit fines and forfeitures, and grant reprieves and pardons, except in cases of impeachment; he may require information from all executive officers; he may, on extraordinary occasions, convene the general assembly, and adjourn it, for any term not exceeding 4 months, in case the two branches cannot agree on the time themselves. He must inform the General Assembly of the state of the Commonwealth; recommend such measures as he shall judge expedient; and

and see that the laws are faithfully executed. In case of vacancy in the office of governor, the Speaker of the Senate fills that office. The judicial power is vested in a supreme and inferior court, the judges of which, and justices of the peace, are appointed by the governor, and commissioned during good behaviour; but are removable on an address from both houses. The other officers of the state are appointed, some by the governor, others by the general assembly, and some by the people. The qualifications for an elector, are 21 years of age, 2 years residence, and payment of taxes. They are privileged from arrest in civil actions, while attending elections. The qualifications for a representative are, 21 years of age, and 3 years inhabitation; for a senator, 25 years of age, and 4 years inhabitation; for a governor, 30 years of age, and 7 years inhabitation. The governor can hold no other office; and the senators and representatives, none but that of attorney at law, and in the militia. No person holding an office of trust or profit under the United States, can hold any office in this state, to which a salary is by law annexed. All the officers of the state are liable to impeachment; and are bound by oath, or affirmation, to support the constitution, and perform the duties of their offices. The declaration of Rights, assert "the natural freedom and quality of all; liberty of conscience; freedom of election, and of the press; subordination of the military and civil powers; trial by jury; security from unreasonable searches and seizures; a right to an equal distribution of justice; to be heard in criminal prosecutions; to petition for redress of grievances; to bear arms; and to be at liberty to emigrate from the State. It declares, that all power is inherent in the people; and that they may, at any time, alter their form of government; that no person shall be obliged to maintain any religious worship, or support any ministry; that all persons, believing in the being of a God, and a future state of rewards and punishments, are eligible to office; that laws cannot be suspended but by the Legislature; that all persons shall be bailable, unless for capital offences; that every debtor shall be released from prison, on delivering his estate to his creditors, according to law, unless there be strong presumption of fraud; that the privileges of the writ of *habeas corpus* shall not be suspended, but in time of rebellion or public danger; that no *ex post facto* law shall be made; that no person shall be attainted by the Legislature, or forfeit his estate for a longer term than his own life; that no title of nobility, or hereditary distinction, shall ever be granted." Among other peculiar laws of this State, are one declaring all rivers and creeks to be open and free to all; another for the emancipation of negroes, a bankrupt law nearly on the same model with that of England, and a law substituting hard labour for a long period, instead of death, as a punishment for many crimes, which are made capital by the laws of England. Murder, however, and some other crimes are still punished with death. The expense of government is estimated at L.32,230 annually.

(6.) PENNSYLVANIA, HISTORY OF. Pennsylvania was discovered in the reign of Henry VII.

along with New York, New Jersey, and the rest of the N. American continent, by Sebastian Cabot, for the crown of England; but Sir Walter Raleigh was the first adventurer that attempted to plant colonies on these shores, in the reign of Q. Elizabeth. Mr Hudson, an Englishman, sailing to that part of the coast which lies between Virginia and New England, in the reign of James I, and being about to make a settlement at the mouth of Hudson's river, the Dutch gave him a sum of money to dispose of his interest in this country to them. In 1608, they began to plant it; and, by virtue of this purchase, laid claim to all those countries which are now denominated *New York, New Jersey, and Pennsylvania*; but there remaining some part of this coast which was not planted by the Hollanders, the Swedes sent a fleet of ships thither, and took possession of it for that crown; but the Dutch having a superior force in the neighbourhood, compelled the Swedes to submit to their dominion, allowing them however, to enjoy the plantations they had settled. The English, not admitting that either the Dutch or Swedes had any right to countries first discovered and planted by a subject of England, and part of them at that time possessed by English subjects, under charter from Q. Elizabeth and K. James I.; K. Charles II, during the first Dutch war in 1664, granted New York, Jersey, and Pennsylvania, of which the Dutch had usurped the possession, to his brother James Duke of York: and Sir Robert Carr being sent over with a squadron of men of war and land forces, and summoning the Dutch governor of the city of New Amsterdam, now New York, to surrender, he yielded that capital to the English: the rest of the places in the possession of the Dutch and Swedes, followed his example; and these countries were confirmed to the English by the Dutch, at the next treaty of peace between the two nations. The Duke of York afterwards parcelled them out to under proprietors; selling, in particular, to William Penn the elder, in 1683, the town of Newcastle, *alias* Delaware, and a district of 12 miles round the same; to whom, his heirs, and assigns, by another deed of the same date, he made over all that tract of land from 12 miles south of Newcastle to the Whore-hills, otherwise called *Cape Henlopen*, now divided into the two countries of Kent and Sussex, which, with Newcastle district, are commonly known by the name of the *Three Lower Countries upon Delaware River*. All the rest of the under-proprietors, some time after, surrendered their charters to the crown; whereby New York and the Jerseys became royal governments; but Penn retained that part of the country which had been sold to him by the Duke of York, together with what had been granted to him before, in 1680-1, which now constitutes the State of Pennsylvania. As soon as Penn had got his patent, he began to plant the country. Those who went over from England were generally Dissenters and Quakers, whose religion is established by law here, but with full liberty to all other Protestant sects. The Dutch and Swedes, who were settled before Mr Penn became proprietor, choosing still to reside in this country, as they did in New York and the Jerseys, obtained the same privileges as the rest of the

the king's subjects; and their descendants are now the same people, speaking their language, and being governed by the same laws. Mr Penn, however, not satisfied with the title granted him by K. Charles II. and his brother, bought the lands also of the Indians for a valuable consideration, or what they esteemed such, (though *twenty miles* were purchased, at that time, for less than an acre about Philadelphia would cost now,) paying them in cloth, tools, and utensils, to their entire satisfaction; for they had not hands to cultivate the roodth part of their lands, and if they could have raised a product, there was nobody to buy: the purchase, therefore, was all clear gain to them; and, by the coming of the English, their paltry trade became so profitable, that they soon found their condition much altered for the better; and are now as well clothed and fed as the Europeans in many places. Pennsylvania is one of the most flourishing states in North America, having never had any quarrel with the natives. Whenever they desire to extend their settlements, they purchase new lands of the sachems, never taking any by force; but the Indians now get a very high price upon their lands, in comparison of what they did at first. In an estimate of the proprietary estate of the province, published above 50 years ago, we find that the proprietaries, who alone can purchase lands here from the natives, had bought 7,000,000 of acres for 750l. sterling, which the proprietaries afterwards sold at the rate of 15l. for every 100 acres. The Indian council at Onondago, however, disapproved of their deputies parting with so much land; and, in 1755, obliged the proprietaries to reconvey great part of the same to the Indians. A dispute subsisted a long time between the proprietaries of the province and Lord Baltimore, proprietary of Maryland, about the right to certain lands; which was at last amicably adjusted, greatly in favour of the Penns. About 1704, there happened some alteration in the constitution of the province. The establishment that took place, and substituted till the American war broke out, consisted of a governor, council, and assembly, each with much the same power and privileges as in the neighbouring colony of New York. The lieutenant-governor and council were appointed by the proprietors Thomas and Richard Penn, with his majesty's approbation; but if the laws enacted here were not repealed within six months after they had been presented to the king for his approbation or disallowance, they were not repealable by the crown after that time. A state of peace and happiness affords few materials for the historian. On the breaking out of the American war, the citizens of Philadelphia took an early and active part. In Sept. 1776, they established a new constitution; which was considerably altered and improved in June 1792. (See § 5.) In 1793, this state, but particularly the capital, was visited by the yellow fever, which, in the short space of 3 months, carried off about 5000 people. In 1794, an alarming insurrection took place in the western counties, the ostensible cause of which was an excise upon whisky, but an incendiary letter afterwards discovered, showed that a deep scheme had been laid to excite a rebellion in the state. But by the wise and

decisive measures adopted by the executive government, supported by the great body of the citizens, the insurrection was quelled and tranquillity restored almost without bloodshed.

(7.) PENNSYLVANIA, LITERARY, HUMANE, AND OTHER SOCIETIES IN. No state in the Union abounds more in Societies instituted for the best purposes, than Pennsylvania. 1. The American Philosophical Society, was instituted in 1769, established by charter in 1780, and consists of 500 members. 2. The Humane Society for the recovery of persons apparently dead by drowning, was instituted in 1770. 3. The Pennsylvania Society for promoting the Abolition of Slavery, was begun in 1774, and enlarged in 1787. The legislature have adopted its humane views, so far as to pass an act, March 1, 1788, "for the gradual abolition of Slavery," wherein, among other things, it was enacted "that no person born within the state shall be a slave for life; and all perpetual slavery is for ever abolished." 4. A Society for promoting political inquiries was instituted in 1787: as was also, 5. a Society for promoting medical, anatomical, and chemical knowledge; which was incorporated by act of Assembly, in March 1789, into a College of Physicians. 6. A Society for the encouragement of Useful Arts was instituted in 1787. 7. The Society of United Brethren for the propagation of the gospel among the heathen, was also instituted in 1787, and incorporated in 1788. 8. The Agricultural Society. 9. The Marine Society. 10. The Charitable Society, for the support of the widows and families of Presbyterian clergymen: besides many other charitable societies, an hospital, a public dispensatory, &c. Colleges and academies, &c. are mentioned under the names of the cities. See CARLISLE, PHILADELPHIA, &c.

(8.) PENNSYLVANIA, MANUFACTURES OF.—These being generally mentioned under the names of the principle towns, it is only necessary here to take notice, that manufactures of all kinds are of late greatly improved and increased in this state; particularly those of leather, skins, furs, boots, shoes, saddles, harnesses, &c.; that iron works are of long standing, and that all the varieties in that branch either of cast or forged iron are made as in Europe; that cabinet-making, house carpentry, coach-making, ship-building, &c. are carried on with equal success; as well as manufactures of paper, stone and glass wares, earthen wares, bricks, gun-powder, and various utensils in copper, brass, and tin. But there is no probability that the citizens of this state will be able to rival the manufacturers of Britain, in their woollen, linen, and cotton cloths, for a long period. One species of manufacture, peculiar to America, is carried on to a great extent; viz. the making of excellent sugar from the maple tree. About 300,000 hats are also made annually of wool and fur.

(9.) PENNSYLVANIA, MINERALS OF. Iron ore is found in considerable quantities throughout this state: copper, lead, and alum in several places. Lime-stone quarries are wrought in many districts, and various kinds of beautiful marble. Coals also abound in the middle and western parts.

(10.) PENNSYLVANIA, NATURAL CURIOSITIES IN. In the *Philos. Transf.* for 1757, there is an account of a copper spring in Pennsylvania. This spring

spring rises from a copper mine, and will dissolve iron in less time by three 4ths than the waters of Wicklow in Ireland, described by Dr William Henry and Dr Bond. From the solution of iron in these waters, about half the quantity of pure copper is procured by melting it in a crucible; but though these waters melt iron sooner than the Irish waters, yet the solution does not produce so great a proportion of copper; for the pure copper procured from the solution of iron in the Irish water, is to the solution as 16 to 20. In the neighbourhood of this, which supplies 800 hhd. in 24 hours, are many ores of vitriol and sulphur; the water is of a pale green colour, of an acid, sweet, austere, inky, and nauseous taste. It is very heavy for the hydrometer, which was immersed in it, stood at the same height as in a solution of one ounce six drams of English vitriol in a quart of water. A very small quantity of the solution of potashes instantly precipitates the metallic parts of this water in three different colours; ochre at the top, green in the middle, and white at bottom; a clean knife kept in it a few minutes, is covered with a bright copper colour. But besides a large proportion of copper, this water contains also a large proportion of vitriol of iron. A pint of it exhaled by a slow fire left 400 grains of solid contents, which appeared to be chiefly saline; for 196 grains of it, dissolved and filtered did not leave above four grains of indissoluble matter. It appears therefore, that the proportion of vitriolic parts in this water is six drams to a pint; consequently it is a stronger solution of vitriol than seawater is of a marine salt. So that besides the copper to be obtained by a solution of iron, it will afford great quantities of vitriol, and the great plenty both of water and fuel will make the establishment of a copperas work extremely cheap and commodious. This water mixed with common water is frequently used as an emetic and cathartic by the country people, and is found very efficacious in the cure of cutaneous disorders and sore eyes. Amongst the other curiosities of this province may be reckoned another spring about 14 feet deep and about 100 square, in the neighbourhood of Reading. A full mill stream issues from it. The waters are clear and full of fishes. From appearances it is probable that this spring is the outlet of a very considerable river, which about two miles above this place sinks into the earth, and is conveyed to this outlet in a subterranean channel. In the northern parts of Pennsylvania there is a creek called *Oil creek*, which runs into the Allegany river. It issues from a spring, on the top of which floats an oil similar to that called Barbadoes tar, and from which one man may gather several gallons in a day. The troops sent to guard the western posts halted at this spring, collected some of the oil, and bathed their joints with it. This gave them great relief from the rheumatic complaints with which they were affected. The waters, of which the troops drank freely, operated as a gentle purge. There are three remarkable caves in this state: one near Carlisle, in Cumberland county; one in the township of Durham, in Buck's county; and the 3d at Swetara, in Lancaster county. The latter is on the E. bank of Swetara river, about a miles above its confluence

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with the Susquehannah. Its entrance is spacious, and descends so much as that the surface of the river is rather higher than the bottom of the cave. The vault of this cave is of solid limestone rock, perhaps 20 feet thick. It contains several apartments, some of them very high and spacious. The water is incessantly percolating through the roof, and falls in drops to the bottom of the cave. These drops petrify as they fall, and have gradually formed solid pillars, which appear as supports to the roof. Forty years ago there were ten such pillars, each six inches in diameter, and six feet high; all so ranged that the place they inclosed resembled a sanctuary in a Roman church. No royal throne ever exhibited more grandeur than this *husus nature*. The resemblances of several monuments are found indented in the walls on the sides of the cave, which appear like the tombs of departed heroes. Suspended from the roof is *the bell* (which is nothing more than a stone projected in an unusual form), so called from the sound that it occasions when struck, which is similar to that of a bell. Some of the stalactites are of a colour like sugar-candy, and others resemble loaf sugar; but their beauty is much defaced. The water, which percolates through the roof, so much of it as is not petrified in its course, runs down the declivity, and is both pleasant and wholesome to drink. There are several holes in the bottom of the cave, descending perpendicularly, perhaps into an abyss below, which renders it dangerous to walk without a light. At the end of the cave is a pretty brook, which, after a short course, loses itself among the rocks. Beyond this brook is an outlet from the cave by a very narrow aperture. Through this the vapours continually pass outwards with a strong current of air, and ascend, resembling at night the smoke of a furnace. Part of these vapours and fogs appear on ascending to be condensed at the head of this great alembic, and the more volatile parts to be carried off, through the aperture communicating with the exterior air, by the force of the air in its passage.

(II.) PENNSYLVANIA, POPULATION OF, AND RELIGIOUS SECTS IN. Dr Morfe, informs us, that in 1787 the inhabitants of Pennsylvania were reckoned at 360,000. They now very far exceed that calculation. These inhabitants consist of emigrants from England, Ireland, Germany, and Scotland. The Friends and Episcopalians are chiefly of English extraction, and compose about one third of the inhabitants. They live principally in Philadelphia, and in the counties of Chester, Philadelphia, Bucks, and Montgomery. The Irish are mostly Presbyterians. Their ancestors came from the north of Ireland, which was originally settled from Scotland; hence they have sometimes been called Scotch Irish, to denote their double descent. But they are commonly and more properly called Irish, or the descendants of people from the north of Ireland. They inhabit the western and frontier counties, and are numerous. The Germans compose one quarter at least, if not a third, of the inhabitants of Pennsylvania. They inhabit the north parts of the city of Philadelphia, and the counties of Philadelphia, Montgomery, Bucks, Dauphin, Lancaster, York, and Northampton; mostly in the four last. They consist of Lutherans (who are the

A a most

most numerous sect). Calvinists, Moravians, Mennonists, Tunkers (corruptly called Dunkers), and Swinselfers, who are a species of Quakers. These are all distinguished for their temperance, industry, and economy. The Germans have usually 15 of 69 members in the assembly: and some of them have arisen to the first honours in the state, and now fill a number of the higher offices. Yet the lower class are very ignorant and superstitious. It is not uncommon to see them going to market with a little bag of salt tied to their horses manes, for the purpose, they say, of keeping off the witches. The Baptists (except the Mennonists and Tunker Baptists, who are Germans) are chiefly the descendants of emigrants from Wales, and are not numerous. A proportionate assemblage of the national prejudices, the manners, customs, religions, and political sentiments of all these, will form the Pennsylvanian character. As the leading traits in this character, thus constituted, we may venture to mention industry, frugality, bordering in some instances on parsimony, enterprise, a taste and ability for improvements in mechanics, in manufactures, in agriculture, in commerce, and in the liberal sciences; temperance, plainness, and simplicity in dress and manners; pride and humility in their extremes; inoffensiveness and intrigue; in regard to religion, variety and harmony, liberality and its opposites, superstition and bigotry; and in politics an unhappy jargon. Such appear to be the distinguishing traits in the collective Pennsylvanian character. Of the great variety of religious denominations in Pennsylvania, the Friends or Quakers are the most numerous. They were the first settlers of Pennsylvania in 1682 under William Penn, and have ever since flourished in the free enjoyment of their religion. See QUAKERS. They are generally honest, punctual, and even punctilious in their dealings; provident for the necessities of their poor; friends to humanity, and of course enemies to slavery; strict in their discipline; careful in the observance even of the punctilios in dress, speech, and manners, which their religion enjoins; faithful in the education of their children; industrious in their several occupations. In short, they have proved themselves to be good citizens. Next to the Quakers, the Presbyterians are the most numerous. There are upwards of 60 ministers of the Lutheran and Calvinist religion, who are of German extraction, now in this state; all of whom have one or more congregations under their care; and many of them preach in splendid and expensive churches. The Lutherans do not differ in any thing essential from the Episcopalian, nor do the Calvinists from the Presbyterians. The Moravians are of German extraction. Of this religion there are about 1300 souls in Pennsylvania, viz. between 500 and 600 in Bethlehem, 450 in Nazareth, and upwards of 300 at Litiz in Lancaster county. The call themselves the *United Brethren of the Protestant Episcopal Church*. They are called *Moravians*, because the first settlers in the English dominions were chiefly emigrants from Moravia. See HERNHUTTERS, and UNITAS FRATRUM; and for the Mennonites, see MENNONITES. They were introduced into America by Count Zinzendorf, and settled at Bethlehem, which is their principal settlement in Ame-

rica, as early as 1741. For the Tunkers, see TUNKERS.

(12.) PENNSYLVANIA, PRINCIPAL TOWNS OF. These are PHILADELPHIA, the capital, Lancaster, Carlisle, Pittsburg, Sunbury, Bethlehem, Nazareth, York, &c. Harrisburg, and Washington. See these articles.

(13.) PENNSYLVANIA, QUADRUPEDS, BIRDS, AND FISH OF. Besides the usual domestic animals, horses, sheep, and oxen, this state abounds with deer, beavers, otters, racoons, martins, panthers, bears, wolves, squirrels, foxes, opossums, rabbits, wild cats, &c. Buffaloes seldom cross the Ohio. Wild turkeys and pheasants, formerly numerous, are now become rare, except in the new settlements. Pigeons, ducks, and wild geese are numerous. Turkeys and other tame poultry are numerous and cheap. The rivers abound with fish.

(14.) PENNSYLVANIA, RIVERS OF. The chief rivers are the Delaware, Schuylkill, Susquehanna, Allegany, Monongahela, and Youghiogany. See these articles.

(15.) PENNSYLVANIA, SOIL AND PRODUCE OF. The soil is various; some parts barren; a great proportion good; and a considerable part uncommonly fertile. In general it is fitter for raising grain than grass. The greater part of the trees and plants, that grow in the United States, abound in Pennsylvania. Oak, hickory, walnut, sassafras, mulberry, and tulip trees abound in the woods. Pines, cedars, red and white, elms and maples also are numerous. Wheat, the staple of Pennsylvania, Indian corn, buck wheat, rye, barley, oats, potatoes, &c. are cultivated in great quantities.

(16.) PENNSYLVANIA, TRADE OF. The commerce with the E. and S. states is chiefly an exchange. Flour, bar iron, hats, shoes, saddles, carriages, spades, axes, hoes, paper, books, tin and iron wares, &c. are exported; and oil, spermaceti, seal skins, salmon, cod, cheese, tar, pitch, furniture, India goods, European clothing, &c. are imported. Its trade with New York depends on the fluctuation of the market; but a great trade is carried on with New Jersey and Delaware; as well as with the Spanish dominions by the Ohio, and with the British by the lakes, and both ways with the Indian nations.

PENNSYLVANIAN, *adj.* Of or belonging to Pennsylvania.

(1.) * PENNY. *n. f.* plural *pence*. [*penig*, Sax.] 1. A small coin, of which twelve make a shilling; a penny is the radical denomination from which English coin is numbered, the copper halfpence and farthings being only *nummorum famuli*, a subordinate species of coin.—

No silver penny to reward her pain. *Dryden.*

One frugal on his birth-day fears to dine,

Does at a penny's cost in herbs repine. *Dryden.*

2. Proverbially. A small sum.—

You shall hear

The legions, now in Gallia, sooner landed

In our not-fearing Britain, than have tidings

Of any penny tribute paid. *Shak.*

We will not lend thee a penny. *Shak.*

—Take not the utmost penny that is lawful, for although it be lawful, yet it is not safe. *Taylor.*

3. Money in general.—

Be

Be sure to turn the *penny*.

—It may be a contrivance of some printer, who hath a mind to make a *penny*.

(2.) PENNY, or PENY, in commerce, an ancient English coin, which had formerly considerable course; but, till of late, was dwindled into an imaginary money, or money of account, containing the 24th part of a shilling, or 140th of a pound. Camden derives the word from the Latin *pecunia, money*. The ancient English penny, *penig*, or *pening*, was the first silver coin struck in England; and the only one current among the Anglo-Saxons; as is agreed by Camden, Spelman, Dr Hicks, &c. The penny was equal in weight to our three-pence; five of them made one shilling, or scilling Saxon; 30 a mark or mancuse, equal to our 7s. 6d. Till the time of King Edward I. the penny was struck with a cross, so deeply indented in it, that it might be easily broke, and parted, on occasion, into two parts, thence called *half-pennies*; or into four, thence called *four-things*, or *farthings*.—But that prince coined it without indenture; in lieu of which, he first struck round halfpence and farthings. He also reduced the weight of the penny to a standard; ordering that it should weigh 32 grains of wheat, taken out of the middle of the ear. This penny was called the *penny sterling*. Twenty of these pence were to weigh an ounce; when the penny became a weight as well as a coin. See *STERLING*, and *PENNYWEIGHT*. The *silver penny* is now high disused; but in 1797, a new copper coinage took place, when a great quantity of halfpenny, penny, and two-penny pieces were struck; the two latter in quite a new form; the second GEORGIUS III. D. G. REX, and BRITANNIA, 1797, on the reverse, being *junk*, instead of being raised.

(3.) PENNY, in ancient statutes, is used for all silver money. And hence the *ward-penny*, *aver-penny*, *hundred-penny*, *tithing-penny*, and *brothal-penny*.

PENNYCUICK, [*Gael. i. e. Cuckoo's bill*], a parish of Scotland, in Mid Lothian 17½ miles long, and 6 broad. The Esk runs through it from W. to E. and nearly divides it. The soil is various; clay, gravel, sand, and moss: Oats, barley, pease, turnips, and potatoes, are the chief crops. The climate is healthy, but the air is keen and piercing, the winters are severe, and the changes of weather often sudden and violent. Iron, lime, free-stone, granite, *petunse pentlandica*, peats, and coals, abound. Silver has also been found in it. There are likewise chalybeate, mineral, and petrifying waters. Many petrified shells of the *mytilus*, *mya*, and *helix*, and figured stones have been found among various strata. On the N. the parish includes a part of the Pentland Hills, which abound with pasture, and feed about 8000 sheep. Of this parish, the population in 1793 was 1721; increased 831, since 1755, chiefly occasioned by the erection of a cotton and 2 paper mills. There are relics of several ancient camps. In this parish also are the seats of *New-Hall*, *Spittal*, and *Penny-cuick-House*. This last is an elegant mansion, erected in 1761, by Sir James Clerk of Penny-cuick, Bart. Its situation is delightful, commanding a prospect of the valley in which the Esk runs, terminated by the W. extremity of Pentland Hills,

Dryden:

and the ruins of BRUNSTONE CASTLE. It has an excellent library of books, paintings, and Roman antiquities, chiefly from ANTONINUS's wall. The policies around it are highly ornamental, and near the river is *Offian's Hall*, an admired work of Runciman's: on the opposite side of the river is an obelisk to the memory of Alan Ramsay, the Scottish poet, who often resided here, and drew the various picturesque scenes of his beautiful pastoral comedy, the *Gentle Shepherd*, from a number of real scenes still visible on the borders of this parish; as is pointed out at considerable length in *Sir J. Sinclair's Stat. Acc.* Vol. XVII. p. 609.—616.

(2.) PENNYCUICK, a village in the above parish, 9 miles SW. of Edinburgh, seated near PENNYCUICK HOUSE.

(3.) PENNYCUICK, Alexander, M. D. a Scottish poet and physician, who published a small volume of humorous poems in the Scottish dialect, in the 17th century. He was proprietor of New Hall and Romanno.

(1.) * PENNYROYAL, or *padding grass*. *n. f.* [*pu-legium*, Latin.] A plant. *Miller*.

(2.) PENNY-ROYAL, in botany. See MENTHA.

(3.) PENNY-ROYAL, VIRGINIAN. See SATUREIA.

(1.) * PENNYWEIGHT. *n. f.* [*penny* and *weight*.] A weight containing 24 grains troy weight.—The Sevil piece of eight is 1½ *pennyweights*, in the pound worse than the English standard, weighs 14 *pennyweights*, contains 13 *pennyweights*, 21 grains and 15 mites, of which there are 20 in the grain sterling silver, and is in value 43 English pence and 11 hundreds of a penny. *Arbuthnot*.

(2.) The PENNY-WEIGHT is a Troy weight, containing 24 grains; each grain weighing a grain of wheat gathered out of the middle of the ear, well dried. The name took its rise hence, that this was formerly the weight of one of our ancient silver pennies. See PENNY. Twenty of these penny-weights make an ounce Troy.

* PENNYWISE. *adj.* [*penny* and *wise*.] One who saves small sums at the hazard of larger; one who is a niggard on improper occasions.—Be not *pennywise*; riches have wings and fly away of themselves. *Bacon*.

(1.) PENNY-WORT, MARSH. See HYDROCO-TYLE.

(2.) PENNY-WORT, WALL. See COTYLEDON.

(3.) PENNY-WORT, WATER. See HYDROCO-TYLE.

* PENNYWORTH. *n. f.* [*penny* and *worth*.] 1. As much as is bought for a penny. 2. Any purchase; any thing bought or sold for money.—As for corn it is nothing natural, save only for barley and oats, and some places for rye; and therefore the larger *pennyworths* may be allowed to them. *Spenser*.

Pirates may make cheap *penn'worths* of their pillage.

And purchase friends. *Shak.*
—You may come into court, and swear that I have a poor *pennyworth* of the English. *Shak.*
—Lucian affirms, that the souls of usurers after their death are translated into the bodies of asses, and there remain certain days for poor men to take their *pennyworths* out of their bones and hides by cudgel and spur. *Peacocks*.—Though in purchases

chases of church-lands men have usually the cheapest pennyworths, yet they have not always the best bargains. *South.* 3. Something advantageously bought; a purchase got for less than it is worth.—For fame he pray'd, but let the event declare.

He had no mighty penn'worth of his pray'r. *Dryd.*
4. A small quantity.—My friendship I distribute in pennyworths to those about me.

(1.) **PENOBSCOT**, a large river of the United States in Maine, which is formed by the confluence of two considerable rivers, called the *E.* and *W. Forks*, that rise on the borders of Canada, and unite below the Moose-head lake, which is 35 miles long and 15 broad. Thence it runs S. for 60 miles to Indian Oldtown, 40 of which are through a fertile level country. About 300 yards farther down, it has a portage of 120 yards. Thence it continues to run S. 47 miles, and falls into the Atlantic at Fort Pownall, where it forms a large Bay, (N^o 3.) The tide runs 35 miles up this river, which is navigable 34 miles by vessels of 30 tons.

(2.) **PENOBSCOT**, a post town and port of entry of the United States, in Maine, capital of Hancock county. It contained 1084 citizens in 1790. It is 121 miles NW. of Portland, 262 N. by E. of Boston, and 606 from Philadelphia. Lon. 68. 40. W. Lat. 44. 24. N.

(3.) **PENOBSCOT BAY**, a large bay of the Atlantic, on the S. coast of Maine, about 48 miles broad; containing several islands. Lon. 68. 40. to 69. 0. W. Lat. 43. 55. to 44. 30.

(4.) **PENOBSCOT HILLS**, mountains of the United States, in Maine, on the W. coast of Penobscot Bay.

(5.) **PENOBSCOTS**, a nation of N. American Indians who live in Indian Old Town, a town on an island in the Penobscot, which they say they have possessed above 500 years. Their island contains about 200 acres of ground.

(1.) **PENPONT**, [from *pendens pons*, Lat.] a parish of Scotland in Dumfriesshire, 24 miles long, and above 5 broad. The ground rises from the SE. by a continual ascent to the NW. where, on the banks of the Scars, (which rises there) it is 3500 feet above the level of the river. The lower part is watered by the Nith. Cairnkinnow is in the middle of the parish. (See **CAIRNKINNOW**.) The whole district exhibits a beautiful and romantic prospect. *Glenquhargen Craig*, a high rock of hard brownish whinstone, is above 1000 feet of perpendicular height. The soil is sandy and mostly deep, but has been much improved by lime. All the usual grains are raised, as well as turnips, potatoes, clover, &c. The population in 1790 was 800; decrease 57, since 1755; the number of sheep was 1200; of black cattle 980.

(2.) **PENPONT**, a village in the above parish, containing about 120 inhabitants.

PENRHYN, DHA, a cape on the W. coast of Wales, in Caernarvonshire; 10 m. S. of Pulhey.

PENRISE, a sea port town of S. Wales, in Glamorganshire, with a market on Thursday; 20 miles SE. of Caermarthen, 14 WNW. of Swansea, and 219 W. of London. Lon. 2. 52. W. Lat. 54. 40. N.

PENRITH, an ancient town of Cumberland in

England, seated under a hill called **PENRITH FELL**, near the rivers Eamont and Lowther. 1 is a great thoroughfare for travellers; but has little other trade, except tanning, and a small manufacture of checks. Formerly it had a castle, but it is now in ruins. In the church-yard is a monument of great antiquity, consisting of two stone pillars 11 feet 6 inches high, and 3 in circumference in the lower part which is rounded; the upper is square and tapers to a point; in the square part is some fret-work, and the relief of a cross; and on the interior side of one is the faint representation of some animal. But these stones are mortified at their lower part into a round one; they are about 15 feet asunder, and the space between them is inclosed on each side with two very large but thin semicircular stones; so that there is left between pillar and pillar a walk of two feet in breadth. Two of these lesser stones are plain, the others have certain figures, at present scarce intelligible. Near these pillars is another called the *giant's thumb*, 5 feet 8 inches high, with an expanded head, perforated on both sides; from the middle the stone rises again into a lesser head, rounded at top; but no part has a tendency to the figure of a cross, being in no part mutilated. The pillars are said to have been set up in memory of Sir Owen Cestatius, a famous warrior, buried here, who killed so many wild bears, which much infested this county, that the figures of bears, cut in stone, on each side of his grave, were set there in remembrance of the execution he made among those beasts; and it is likewise said his body extended from one pillar to the other. In the market-place there is a town-house of wood, beautified with bears climbing up a ragged staff. There is a memorandum on the N. side of the vestry without, that, in 1598, 1266 persons died here of the plague. There is a charity-school in this place for 20 boys, and another for 30 girls, maintained by 55l. a year, by the sacrament money and parish stock. In 1715 the Scotch Highlanders entered this town, and quartered in it for a night, in their way to Preston, without doing much harm; but in the rebellion, 1745, they were, it is said, very rapacious and cruel. Its handsome spacious church has been lately rebuilt, and the roof supported by pillars, whose shafts are of one entire reddish stone, dug out of a neighbouring quarry. On the E. part of the parish, upon the N. bank of the river Eamont, there are two caves or grottoes, dug out of the solid rock, and sufficient to contain 100 men. The passage to them is very narrow and dangerous; and it is possible that its perilous access may have given it the name of *Isis Parliis*. The vulgar tell many stories of one *Ihs*, a giant, who lived there in former times. But probably, these subterraneous chambers were made for a secure retreat in time of sudden danger; and the iron gates, which were taken away not long ago, seem to confirm that supposition. Lon. 3. 16. W. Lat. 54. 35. N.

PENROSE, Thomas, was the son of the Rev. Mr Penrose, rector of Newbury, Berks, a man of great abilities, descended from an ancient Cornish family. Mr Penrose, jun. being intended for

the church, pursued his studies with success, at Christchurch, Oxford, until summer 1762; when his eager turn to the naval and military line overpowering his attachment to his real interest, he left his college, and embarked in the unfortunate expedition against Nova Colonia, in South America, under Captain Macnamara. The issue was fatal. The Clive (the largest vessel) was burnt; and though the Ambuscade escaped (on board of which Mr Penrose, acting as lieutenant of marines, was wounded), yet the hardships which he afterwards sustained in a prize sloop, in which he was stationed, utterly ruined his constitution. Returning to England with ample testimonials of his gallantry and good behaviour, he finished, at Hertford College, Oxford, his course of studies; and having taken orders, accepted the curacy of Newbury, the income of which, by the voluntary subscription of the inhabitants, was considerably augmented. After he had continued in that station about 9 years, he was presented by a friend to a living worth near 500*l.* *per annum*. It came, however, too late; for Mr Penrose's health was now in a deep decline, and he died at Bristol in 1779, aged 36. In 1768 he married Miss Mary Stocock of Newbury, by whom he had one child, Thomas, who was educated at Winton College. Mr Penrose was respected for his extensive erudition, admired for his eloquence, and esteemed for his social qualities. By the poor, to whom he was liberal, he was venerated. To his poetical abilities, the public, by their reception of his *Flights of Fancy*, &c. have given a favourable testimony.

PENRYN, a town of Cornwall, seated on a hill at the entrance of Falmouth haven by Pendennis castle. It consists of about 300 houses; and the streets are broad and well paved. There are so many gardens and orchards in it, that it resembles a town in a wood. It is well watered with rivulets, and has an arm of the sea on each side of it, with a good customhouse and quay, and other neat buildings. It drives a considerable trade in pilchards, and in the Newfoundland fishery. It was anciently governed by a portreeve; but James I. made it a corporation, consisting of a mayor, 11 aldermen, 12 common-councilmen, with a recorder, steward, &c. an office of record, with a prison, and power to try felons. The mayor and two aldermen are justices of the peace. There was anciently a monastery in this place, and there are still relics of a tower, garden walls, and a collegiate church. It has now neither church nor chapel. It has sent members to parliament ever since the first year of Queen Mary; and James II. granted it a new charter, but it was never made use of, all the inhabitants that pay scot and lot, who are about 100, being the electors. Mr Rymer gives a very remarkable account how Penryn was once saved by a company of strolling players. He says, that in the end of the 16th century, the Spaniards were landing to burn the town, just as the players were setting Samson upon the Philistines; which performance was accompanied with such drumming and shouting, that the Spaniards thought some ambush was laid for them, and scampered back to their ships. Queen

Elizabeth founded a free school in this place. Lon. s. 35. W. Lat. 50. 23. N.

PENS, a town of Cuba, 22 m. SW. of Bayamo. **PENSACOLA**, the capital of W. Florida, is seated at the mouth of a river on the gulf of Mexico. It was established by the French, and ceded to Great Britain in 1763. Its first discoverer was Sebastian Cabot, in 1499. It was reduced in 1781, by the Spaniards under Don Bernard Galvez, after the most obstinate defence made by the British troops that is possible to be conceived, against a much superior force of Spanish veterans. The bravery of the British would indeed, in all probability, have preserved the place, had not a shell burst open the door of a powder magazine under the redoubt, by which it was blown up, and 100 men killed or wounded. A capitulation therefore became absolutely necessary, which was obtained on honourable terms. The town, with the whole province of West Florida, was confirmed to the Spaniards by the treaty of 1783. Lon. 87. 20. W. Lat. 30. 22. N.

PENSANCE, a town of Cornwall, at the bottom of Mountfay, about 10 miles from the Land's End. It was burnt in 1595 by the Spaniards, who, with four galleys, surprised this part of the coast, and set fire to several villages and farms; but it was soon after rebuilt, made one of the coinage towns, and has now a considerable trade. It lies in the parish of Madern, noted for its restorative spring, famous for curing lameness, cholera, &c. It is well built and populous, and has many ships. The shore abounds so much with lead, tin, and copper ore, that the veins thereof appear on the utmost extent of land at low-water mark. It is 287 miles W. by S. of London. Lon. s. 35. W. Lat. 51. 23. N.

PENSBURY. See **PENNSBURY**.

PENSFORD, a town of Somersetshire, with a market on Tuesday. It is seated on the Chew, and is famed for its bats and bread. It lies 7 miles W. of Bath, and 117 W. by S. of London. Lon. 2. 30. W. Lat. 51. 23. N.

* **PENSILE**. *adj.* [*penfilis*, Latin.] 1. Hanging; suspended.—Two trepidations; the one manifest and local, as of the bell when it is *penfile*; the other secret, of the minute parts. *Bacon*.—

Anxius I ask you how the *penfile* ball

Should never strive to rise, nor never fear to fall? *Prior*.

2. Supported above the ground.—

The marble brought, erects the spacious dome,
Or forms the pillars long-extended rows,
On which the planted grove and *penfile* garden grows. *Prior*.

* **PENSILENESS**. *n. f.* [from *penfile*.] The state of hanging.

PENSILES HORTI, *Hanging Gardens*, in antiquity. See **BABYLON**, § 4.

PENSILVANIA, an erroneous spelling. See **PENNSYLVANIA**.

* **PENSION**. *n. f.* [*pension*, Fr.] An allowance made to any one without an equivalent. In England it is generally understood to mean pay given to a state hiring for treason to his country.—A charity bestowed on the education of her young subjects has more merit than a thousand *pensions* to

to those of a higher fortune. *Guardian*.—He has lived with the great without flattery, and been a friend to men in power without *penfions*. *Pope*.—

Chremes, for airy *penfions* of renown,
Devotes his service to the state and crown.

Young.

(2.) A *PENSION* is or ought to be a sum of money paid annually for actual services, or considerations already past. The yearly payment of each member to the houses of the inns of courts are likewise named *penfions*; and the yearly assembly of the society of Gray's Inn, to consult on the affairs of the house, is also called a *penfion*.

* To *PENSION*. *v. a.* [from the noun.] To support by an arbitrary allowance.—One might expect to see medals of France in the highest perfection, when there is a society *penfioned* and set apart for the designing of them. *Addison*.—

The hero William, and the martyr Charles,
One knighted Blackmore, and one *penfion'd* Quarles.

Pope.

(1.) * *PENSIONARY*. *adj.* [*penfionnaire*, Fr.] Maintained by *penfions*.—

His silly plots, and *penfionary* spies. *Donne*.
—They were devoted by *penfionary* obligations to the olive. *Houel's Vocal Forest*.

(2.) *PENSIONARY*, *n. f.* or *PENSIONER*, a person who has an appointment or yearly sum, payable during life, by way of acknowledgment, charged on the estate of a prince, company, or particular person.

(3.) *PENSIONARY*, in the ci-devant government of the United Provinces, was the first minister of the regency of each city in Holland. His office was to give his advice in affairs relating to the government, either of the state in general, or of the city in particular; and in assemblies of the states of the province, he was speaker in behalf of his city. The function, however, of these *penfionaries* was not everywhere alike; in some cities they only gave their advice, and were never found in assemblies of the magistrates, except when expressly called thither: in others they attended constantly; and in others they made the propositions on the part of the burgomasters, drew up their conclusions, &c. They were called *penfionaries*, because they received an appointment or *penfion*.

(4.) *PENSIONARY*, *GRAND*, a ci-devant appellation given to the first minister of the States of Holland. The grand *penfionary* was chairman in the assemblies of the states of that province: he proposed the matters to be consulted on; collected the votes; formed and pronounced the resolutions of the states; opened letters; conferred with foreign ministers, &c. His business was also to inspect the finances, to maintain the authority of the states, and to see that the laws were observed; and he was perpetual deputy of the states-general of the United Provinces. His commission was, however, given him only for five years; after which it was deliberated whether or not it should be renewed; but there is no instance of its being revoked; therefore death only put an end to the functions of this important minister.

(1.) * *PENSIONER*. *n. f.* (from *penfion*.) 1. One who is supported by an allowance paid at the will of another; a dependant.—Prices of things necessary for sustentation grew excessive, to the

hurt of *penfioners*, soldiers, and all hired servants. *Camd*.—

Hovering dreams,

The fickle *penfioners* of Morpheus' train. *Milt*.
—He would make inquiry for new *penfioners*. *Fell*.
—The rector is maintained by the perquisites of the curate's office, and therefore is a kind of *penfioner* to him. *Collier*. 2. A slave of state hired by a stipend to obey his master.—

In Britain's senate he a seat obtains,

And one more *penfioner* St Stephen gains. *Pope*.

(1.) *PENSIONER*, in the university of Cambridge, and in that of Dublin, has a very peculiar meaning; for those students, either under-graduates or bachelors of arts, are called *penfioners*, who live wholly at their own expence, and who receive no emolument whatever from the college of which they are members. They are divided into two kinds, the *greater* and the *less*; the former of whom are generally called *fellow-commoners*, because they eat with the fellows of their college; the latter are always called *penfioners*, and eat with the scholars, who are those students of the college, either under-graduates or bachelors, who are upon the foundation, who receive emoluments from the society, and who are capable of being elected fellows. See *SERVITOR* and *SIZAR*.

(3.) *PENSIONER*, in general, denotes a person who receives a *penfion*, yearly salary, or allowance from government. Hence

(4.) *PENSIONERS*, THE BAND OF GENTLEMEN, the noblest sort of guard to the king's person, consists of 40 gentlemen, who receive a yearly *penfion* of 100l. This honourable band was first instituted by King Henry VIII. and their office is to attend the king's person, with their battle-axes, to and from his chapel-royal, and to receive him in the presence-chamber, or coming out of his privy lodgings: they are also to attend at all great solemnities, as coronations, St George's feast, public audiences of ambassadors, at the sovereign's going to parliament, &c. They are each obliged to keep three double horses and a servant, and so are properly a troop of horse. They wait half at a time quarterly; but on Christmas day, Easter day, Whitunday, &c. and on extraordinary occasions, they are all obliged to give their attendance. They likewise carry up the sovereign's dinner on the coronation-day and St George's feast; at which times the king or queen usually confer the honour of knighthood on two such gentlemen of the band as their captain presents. Their arms are gilt battle-axes; and their weapons on horseback, in time of war, are cuirassiers arms, with sword and pistols. Their standard, in time of war, is argent, a cross gules. Their captain is always a nobleman, who has under him a lieutenant, a standard-bearer, a clerk of the check, secretary, paymaster, and harbingers.

* *PENSIVE*. *adj.* [*penfif*, French; *penfivo*, Italian.] 1. Sorrowfully thoughtful; sorrowful; mournfully serious; melancholy.—Think it still a good work, which they, in their *penfivo* care for the well bestowing of time, account waste. *Hooker*.—

Are you at leisure, holy father?—

—My leisure serves me, *penfivo* daughter, now.

Shak.

Anxious cares the *penfivo* nymph oppress. *Pope*.

2. It

2. It is generally and properly used of persons; but *Prior* has applied it to things.—

We, at the sad approach of death, shall know
The truth, which from these *penfive* numbers flow,
That we pursue false joy, and suffer real woe.

Prior.

* **PENSIVELY**, *adv.* [from *penfive*.] With melancholy; sorrowfully; with gloomy seriousness.—
On herbs and flowers she walked *penfively*.

Spenser.

* **PENSIVENESS**, *n. f.* [from *penfive*.] Melancholy; sorrowfulness; with gloomy seriousness.—
Concerning the blessings of God, we should delight more in giving thanks than in making requests for them, inasmuch as the one hath *penfive-ness* and fear, the other always joy annexed.

Hooker.

Would'st thou unlock the door
To cold despairs and gnawing *penfive-ness*?

Herbert.

PENSTOCK, *n. f.* a sluice or flood-gate, serving to retain or let go the water of a mill-pond, or the like.

* **PENT**, *part. pass.* Shut up,—

Cut my lace asunder,
That my *pent* heart may have some scope to beat.
The son of Clarence have I *pent* up close.

Shakespeare.

Shakespeare.

The soul pure fire, like ours of equal force;
But *pent* in flesh, must issue by discourse. *Dryd.*
Pent up in Utica, he vainly forms
A poor epitome of Roman greatness. *Cato.*
PENTA, a town of the French empire, in the island and department of Corsica; 7 miles NE. of Porta.

* **PENTACAPSULAR**, *adj.* [from *pent* and *capsular*.] Having five cavities.

PENTACEROS, in natural history, a name given by Linkius and some other authors to a kind of *stella marina*, or sea star-fish, composed of five principal rays, with several transverse hairy or downy processes.

(1.) * **PENTACHORD**, *adj.* [from *pent* and *chord*.] An instrument with five strings.

(2.) *The* **PENTACHORD**, [of *pent* five, *chord* string.] was an ancient musical instrument. The invention of the pentachord is referred to the Scythians; the strings were of bullock's leather; and they were struck with a plectrum made of goat's horn.

PENTACROSTIC, in poetry, a set of verses so disposed as that there are always five acrostics of the same name, in five divisions of each verse. See **ACROSTIC**.

PENTACTINODOS, in natural history, a name given by some authors to those species of star-fish which are composed of a body divided into five rays.

PENTADACTYLON, FIVE FINGERS, in botany, a name given by some authors to the *ricinus* or *palmia Christi*, from the figure of its leaf.

PENTADACTYLOS *pisces*, the *five-fingered fish*, in ichthyology, the name of a fish common in all the seas about the East Indies, and called by the Dutch there *vijs vinger visch*. See *Plate*

CCLXVII. It has this name from five black streaks which it has on each side, resembling the prints of five fingers. Its head is flat, convex at the bottom, plain in the sides, and inclined in the fore part. The snout is thick, obtuse, and round; the lower jaw at its extremity bent and rounded; the nostrils are double; the balls of the eye oval; the iris of a silver colour; the first fin of the back is small, the second is more elevated; those of the breast are inserted obliquely, that of the anus is greatly extended, and that of the tail much sloped. The whole body is covered with scales of a moderate size, thin, flexible, and slightly indented on their hinder edge; the back is reddish, the sides of a silver colour, and the fins white. The fish is described by some as about nine inches long; by others as a foot and a half. It is a dry but not ill-tasted fish.

PENTAEDROSTYLA, in the old system of mineralogy, a genus of spars. (See **SPAR**.) The bodies of this genus are spars in form of pentagonal columns, terminated by pentangular pyramids at one end, and regularly affixed at the other to some solid body.

* **PENTAEDROUS**, *adj.* [from *pent* and *edra*.] Having five sides.—The *pentae-drous* columnar coralloid bodies are composed of plates set lengthways, and passing from the surface to the axis. *Woodward.*

(1.) * **PENTAGON**, *n. f.* [from *pentagon*, Fr. *cinqui* and *gonia*.] A figure with five angles.—I know of that famous piece at Capralora, cast by Baroccio into the form of a *pentagon* with a circle inscribed. *Watson.*

(2.) **PENTAGON**, in geometry, is a figure of five sides and five angles. See **GEOMETRY**.

(3.) **PENTAGONS**, in fortification, denotes a fort with five bastions.

* **PENTAGONAL**, *adj.* [from *pentagon*.] Quinquangular; having five angles.—The body being cut transversely, its surface appears like a net made up of *pentagonal* meshes, with a *pentagonal* star in each mesh. *Woodward.*

PENTAGONOTHECA, in botany, the name given by Vaillant to the plant called by Linnæus, Plumier, Houston, and others, *PISONIA*.

(1.) **PENTAGRAPH**, *n. f.* an instrument designed for drawing figures in what proportion you please, without any skill in the art. See **MINIATURE**, § 2. The instrument is otherwise called a **PARALLELOGRAM**. The common pentagraph (*Plate* CCLXV. *fig.* 13.) consists of 4 brass or wooden rulers, two of them from 15 to 18 inches long, the other two half that length. At the ends, and in the middle, of the longer rulers, as also at the ends of the shorter, are holes, upon the exact fixing whereof the perfection of the instrument chiefly depends. Those in the middle of the long rulers are to be at the same distance from those at the end of the long ones, and those of the short ones; so that when put together, they may always make a parallelogram. The instrument is fitted together for use by several little pieces, particularly a little pillar, N^o 1. having at one end a screw and nut, whereby the two long rulers are joined; and at the other a little knot for the instrument to slide on. The piece, N^o 2. is a rivet with a screw and nut, wherewith each short

short ruler is fastened to the middle of each long one. The piece N^o 3. is a pillar, one end whereof, being hollowed into a screw, has a nut fitted to it. At the other end is a worm to screw into the table; when the instrument is to be used, it joins the end of the two short rulers. The piece, N^o 4. is a pen, portcrayon, or pencil, screwed into a little pillar. Lastly, the piece, N^o 5. is a brads point, moderately blunt, screwed likewise into a little pillar.

(2.) PENTAGRAPH, METHOD OF USING THE.

I. To copy a design in the same scale or bigness as the original: screw the worm N^o 3. into the table; lay a paper under the pencil N^o 4. and the design under the point N^o 5. This done, conducting the point over the several lines and parts of the design, the pencil will draw or repeat the same on the paper. II. If the design be to be reduced—e. g. into half the space, the worm must be placed at the end of the long ruler, N^o 4. and the paper and pencil in the middle. In this situation, conduct the brads point over the several lines of the design, as before; and the pencil at the same time will draw its copy in the proportion required; the pencil here only moving half the lengths that the point moves. Hence, on the contrary, if the design be to be enlarged by one half, the brads point, with the design, must be placed in the middle, at N^o 3. the pencil and paper at the end of the long ruler, and the worm at the other. III. To enlarge or reduce in other proportions, there are holes drilled at equal distances on each ruler, viz. all along the short ones, and half way of the long ones, in order for placing the brads point, pencil, and worm, in a right line therein; i. e. if the piece carrying the point be put in the third hold, the two other pieces must be put in its third hole. If, then, the point and design be placed at any hole of the great rulers, and the pencil with the paper at any hole of the short ruler, which forms the angle therewith, the copy will be less than half the original. On the contrary, if it be placed at one of the holes of that short ruler, which is parallel to the long ruler, the copy will be greater than half the original. The construction of this instrument requires a degree of accuracy which most of our instrument-makers are strangers to; for which reason, there are very few of the instruments that succeed. Few will do any thing tolerably but straight lines; and many of them not even these. To prove that the figure described by a pentagraph is similar to the given figure, let C (fig. 14.) be the fixed centre of motion; P the pencil for tracing the given figure PP', and p the pencil which traces the other figure pp'; p, &c. must be so adjusted, that p, C, and P, may lie in one straight line; then, since Bp : Ap :: BP : AC, whatever be the situation of the pentagraph, the angles PCP and pCp are vertical; and therefore PCp will in every position of the instrument be a right line: but PCpC :: BA : Ap, in each of the two positions in the figure, and consequently the triangles PCP, pCp, are similar; and PP : pp (:: PC : pC) :: BA : Ap, or in a given ratio. Hence it appears, that, by moving the pencil p, Ap may be equal to BA, or less in any proportion; and consequently pp may be equal to PP, or less, in the same proportion.

PENTAGYNIA, [from *πεντε*, five, and *γυνή*, a woman, or wife,] in the Linnæan System of Botany, an order in the classes pentandria, decandria, dodecandria, icofandria, and polyandria; consisting of plants which have hermaphrodite flowers, with 5 female organs. See BOTANY, § 180, 185, 186, 187, 188.

PENTALUPO, a town of Naples, in Calabria Ultra, 6 miles E. of Reggio.

(1.) * PENTAMETER. n. f. [*pentametre*, Fr. *pentametrum*, Lat.] A Latin verse of five feet.—Mr Distich may possibly play some *pentameters* upon us, but he shall be answered in Alexandrines. *Addison*.

(2.) PENTAMETER VERSE. The two first feet may be either dactyls or spondees at pleasure; the third is always a spondee; and the two last anapests: such is the following verse of Ovid.

1 2 3 4 5
Carminibus vivas tempus in omne meis.

A pentameter verse subjoined to an hexameter, constitutes what is called *elegiac*. See ELEGIAC.

(1.) PENTANDRIA, [from *πεντε*, five, and *ανδρ*, a man, or husband,] the fifth class in Linnæus's sexual method, consisting of plants which have hermaphrodite flowers, with five stamina or male organs. See BOTANY, *Index*.

(2.) PENTANDRIA is also the name of an order in the classes monadelphia, diadelphia, polyadelphia, gynandria, monecia, and dioecia. See BOTANY, § 191, 192, 193, 195, 196, 197.

* PENTANGULAR. adj. [*πεντε* and *angular*.] Five-cornered.—His thick and bony scales stand in rows, so as to make the flesh almost *pentangular*. *Grew*.

(1.) * PENTAPETALOUS. adj. [*πεντε* and *petala*, Lat.] Having five petals or leaves.

PENTAPETES, in botany, a genus of the dodecandria order, belonging to the monadelphia class of plants; and in the natural method ranking under the 37th order, *Columnifera*. The calyx is quinquepartite; the stamina are 20 in number, of which five are castrated and long; the capsule quinquelocular and polyspermous. There is but one species known, viz.

PENTAPETES PHOENICIA, with halbert-pointed, spear-shaped, sawed leaves. It is an annual plant, a native of India, and rises to 2 or 3 feet, adorned with fine scarlet flowers, consisting of one petal cut into five segments. In the centre of the flower arises a short thick column, to which adhere 15 short stamina. It is a tender plant, and must be brought up in the hot-house.

(1.) PENTAPOLIS, a name given to the five cities, Sodom, Gomorrah, Admah, and Zeboim, and Zoar. (Wisdom x. 6.) They were all five condemned to utter destruction, but Lot interceded for the preservation of Zoar, otherwise called *Bela*. The other 4 were destroyed by lightning, (Gen. xix. 24. 25.) and in the place where they stood arose the lake Asphaltites, or the lake of Sodom.

(2.) PENTAPOLIS, a district of Cyrenaica; situated on the Mediterranean; denominated from its five cities; namely, Berenice, Arsinoe, Ptolemais, Cyrene, and Apollonia. *Ptol*.

(3.) PENTAPOLIS OF THE PHILISTINES, the

5 cities of the Philistines, Gaza, Gath, Ascalon, Azotus, and Ekron.

* **PENTASPAST.** *adj.* [*pentaspaste*, Fr. *pentaspaste*] An engine with five pullies. *Diâ.*

* **PENTASTICK.** *n. f.* [*pentaste* and *stick*] A composition consisting of five verses.

* **PENTASTYLE.** *n. f.* [*pentaste* and *style*] In architecture, a work in which are five rows of columns. *Diâ.*

(1.) * **PENTATEUCH.** *n. f.* [*pentaste* and *teuch*; *pentateuque*, Fr.] The five books of Moses.—The author in the ensuing part of the *pentateuch* makes not unfrequent mention of the angels. *Bentley.*

(2.) **PENTATEUCH** is derived from the Greek *pentasteuach*, from *pentaste*, five, and *teuch*, an instrument or volume; and signifies the collection of the five instruments or books of Moses, viz. GENESIS, EXODUS, LEVITICUS, NUMBERS, and DEUTERONOMY. See these articles.

PENTATHLON, or, in antiquity, a general **PENTATHLUM**, } name for the five exercises performed at the Grecian games, viz. wrestling, boxing, leaping, running, and playing at the discus.

(1.) * **PENTECOST.** *n. f.* [*pentekoste*; *pentecoste* Fr.] 1. A feast among the Jews. *Pentecost* signifies the fiftieth, because this feast was celebrated the 50th day after the 16th of Nisan, which was the 2d day of the feast of the passover: the Hebrews call it the feast of weeks, because it was kept 7 weeks after the passover; they then offered the first fruits of the wheat harvest, which then was completed; it was instituted to oblige the Israelites to repair to the temple, there to acknowledge the Lord's dominion, and also to render thanks to God for the law he had given them from mount Sinai, on the fiftieth day after their coming out of Egypt. *Calmer.* 2. Whitsuntide.—

'Tis since the nuptial of Lucentio,

Come *pentecost* as quickly as it will,

Some five and twenty years.

Shak.

(2.) **PENTECOST.** At this feast the Jews also presented at the temple seven lambs of that year, one calf, and two rams, for a burnt offering; two lambs for a peace offering; and a goat for a sin offering (Levit. xxiii. 15, 16. Exod. xxxiv. 22. and Deut. xvi. 9, 10.) The modern Jews celebrate the *pentecost* for two days. They deck the synagogues and their own houses with garlands of flowers. They hear a sermon in praise of the law, which they suppose to have been delivered on this day. The Jews of Germany make a very thick cake, consisting of 7 layers of paste, which they call *Sinai*. The 7 layers represent the 7 heavens, which they think God reascended from the top of this mountain. (See *Leo de Modena* and *Buxtorfii synag. Jud.*) It was on the feast of *pentecost* that the Holy Ghost miraculously descended on the apostles. (Acts ii.)

(3.) **PENTECOST**, an island in the Archipelago of the Great Cyclades. It was discovered by Bougainville on *pentecost* day, 22d May, 1768. It is 6 miles from Aurora Island. Lon. 165. 53. E. of Paris. Lat. 15. 8. S.

* **PENTECOSTAL.** *adj.* [from *pentecost*] belonging to Whitsuntide.—I have composed sundry collects, made up out of the church collects (VOL. XVII. PART I.)

with some little variation; as the collects adventual, quadragesimal, paschal, or *pentecostal*. *San.*

PENTECOSTE, a river of Canada, which runs into the St Lawrence, in Lon. 66. 45. W. Lat. 49. 45. N.

PENTELICUS, a mountain of Attica, famous for beautiful marble.

PENTHESILEA, queen of the AMAZONS, succeeded Orthia, and gave proofs of her courage at the siege of Troy, where she was killed by Achilles. Pliny says that she invented the battle-axe.

PENTHEUS, in fabulous history, the son of Ethion and Agave, king of Thebes in Boeotia. He was murdered by the Bacchanalian women, for opposing the worship of Bacchus, then newly introduced; though others say it was for prying into the mysteries of the new deity. His mother and his aunts, Ino and Autonoe, were the first to tear him to pieces. (*Ovid. Met.* iii. fab. 7, 8, 9. *Virg. Æn.* iv. 469.) See MYSTERIES, § 25.

PENTHIER, a cape on the W. coast of France, 7½ miles SE. of St Mathieu. Lon. 13. 3. E. Ferro. Lat. 48. 15. N.

PENTHIEVRE, a fort of France, in the dep. of Morbihan, on the peninsula of Quiberon; 7 miles N. of Quiberon, and 9 S. of Auray.

PENTHILUS, a son of Orestes and Erigone, the daughter of Ægypthus; who reigned conjointly with his brother Tisamenes at Argos, till they were expelled by the HERACLIDÆ. He then went to Achaia, and thence to Lesbos, where he planted a colony. *Paus.* 4. *Patere.* 1. c. 1.

PENTHORUM, in botany, a genus of the pentagynia order, belonging to the pentandria class of plants. The calyx is quinquefid; there are either 5 petals or none; the capsule is five-pointed and quinquelocular.

* **PENTHOUSE.** *n. f.* [*pent*, from *pente*, Fr. and *house*] A shed hanging out aloft from the main wall.—This is the *penthouse* under which Lorenzo desir'd us to make a stand. *Shak.*

Sleep shall neither night nor day

Hang upon his *penthouse* lid.

Shak.

—The Turks lurking under their *penthouse*, laboured with mattocks to dig up the foundation of the wall. *Knolles.*—Those defensive engines, made by the Romans into the form of *penthouses* to cover the assailants from the weapons of the besieged, would be presently batter in pieces with stones and blocks. *Wilkins.*

My *penthouse* eye-brows, and my shaggy beard,

Offend your sight.

Dryden.

The chill rain

Drops from some *penthouse* on her wretched head.

Rowe.

PENTHYLUS, a king of Paphos, who assisted Xerxes with 12 ships. Being seized by the Greeks he gave them much useful information as to the situation of the Persians. *Herod.* vii. 195.

* **PENTICE.** *n. f.* *appetitir*, French; *pendice*, Italian. It is commonly supposed a corruption of *penthouse*; but perhaps *pentice* is the true word. A sloping roof.—Climes that fear the falling and lying of much snow, ought to provide more inclining *pentices*. *Wotton.*

B b

PEN-

PENTIDATILO, a town of Naples, in Calabria Ultra; 12 miles SE. of Reggio.

* **PENTILE**, *n. f.* [*pent* and *tile*.] A tile formed to cover the sloping part of the roof: they are often called *pantiles*.—*Pentiles* are 13 inches long, with a button to hang on the laths; they are hollow and circular. *Maxon*.

PENTIMA, a town of Naples, in Abruzzo Citra; 6 miles NW. of Solmona.

PENTLAND, or **PICTLAND**, names given to a frith, a ridge of hills, and several islands of Scotland, in very different parts of the kingdom. These names appear to have the same derivation; *Pentland* being only a variation in orthography from *Paintland*, and *Pisland* being undoubtedly derived from *Pitti* the name given by the Romans to our ancestors, the *Pitti*, because like some other savage nations they *painted* their bodies. See **PICTS**.

1. **PENTLAND FRITH**, or **PICTLAND FRITH**, a narrow strait of 12 miles between the main land of Scotland and the Orkney isles. This frith is the great thoroughfare of shipping between the E. and W. seas, the terror of the boldest mariners, and the grave of thousands. By the meeting of many different tides, the sea runs with such impetuosity, that no vessel can withstand it. The spray is often driven several miles on land. These storms however, afford many natives on the opposite shores a better livelihood than they could obtain by fishing or husbandry. They search from place to place, and from one cavern to another, in the hopes of finding timber, casks, and other floating articles of the wrecked vessels, of which 6 or 8 are often sacrificed in one night. The navigation of this pass is rendered more dangerous by the island of Stromo, and two rocks called the **SKERRIES**, lying near the middle of it. (See N° 3.) It may be crossed and failed through, however, without danger, at particular times, known to the pilots on that coast. But if the proposed canal from Inverness to Fort William were carried into execution, all danger from this circuitous navigation would be prevented.

2. **PENTLAND HILLS**, a ridge of hills which begin about 4 miles S. by W. of Edinburgh, and extend 10 miles W. towards the W. borders of Mid-Lothian. They are mostly green to the top, and afford excellent pasture to numerous flocks of sheep. The valleys between them are watered by several romantic streams; particularly the *North Esk*, *Glenerss*, and *Logan water*. Some of the hills are very high. *Curketon Craig*, the most northern, is 1450 feet above the sea level; *Capellaau*, W. of it, is 1550; and *Logan-house* hill is 1700. In this last is found the stone called *Petrus*. **PENTLANDICA**, from its resemblance to the materials used in China for making china wares. The hills of *Braid* and *Blackford* are a continuation of this ridge.

3. **PENTLAND SKERRIES**, three islands in the E. end of Pentland Frith; on the largest of which two light-houses were erected in 1794; 4 miles NE. of Duncan's Bay Head. Lon. O. 25. E. of Edinburgh. Lat. 58. 35. N.

PENTSTEMON. See **CHELONE**, N° 3.

* **PENT UP**, *part. adj.* [*pent*, from *pen* and *up*.] Shut up.—

Close pent up guilts

Rive your concealing continents. *K. Lear.*

PENVENAN, a town of France, in the dep. of the North Coasts; 3 miles NW. of Treguier, and 7½ NE. of Lannoin.

PENULA, among the ancient Romans, was a coarse garment or cloak worn in cold or rainy weather. It was shorter than the *lacerna*, and therefore more proper for travellers. It was generally brown, and succeeded the toga after the state became monarchick. Augustus abolished the custom of wearing the *penula* over the toga, considering it as too effeminate for Romans; and the *sedes* had orders to suffer none to appear in the circus or forum with the *lacerna* or *penula*. Writers are not agreed as to the precise difference between these two articles of dress; but we are told that they were chiefly worn by the lower orders of people. See **LACERNA**.

PENULTIMA, or **PENULTIMATE SYLLABLE**, in grammar, the last syllable but one of a word.

* **PENULTIMATE**, *adj.* [*penultimus*, Lat.] Last but one.

(1.) * **PENUMBRA**, *n. f.* [*pene* and *umbra*, Lat.] An imperfect shadow, that part of the shadow which is half light.—The breadth of this image answered to the sun's diameter, and was about two inches and the eighth part of an inch, including the *penumbra*. *Newton*.

(2.) **PENUMBRA**, in astronomy, is a partial shade observed between the perfect shadow and the full light in an eclipse. It arises from the magnitude of the sun's body: for were he only a luminous point, the shadow would be all perfect; but, by reason of the diameter of the sun, it happens, that a place which is not illuminated by the whole body of the sun, does yet receive rays from a part thereof.

* **PENURIOUS**, *adj.* [from *penuria*, Latin.] 1. Niggardly; sparing; not liberal; sordidly mean.—

What more can our penurious reason grant
To the large whale or castled elephant? *Prior*.

2. Scant; not plentiful.—
Some penurious spring by chance appear'd,
Scanty of water. *Addison*.

* **PENURIOUSLY**, *adv.* [from *penurious*.] Sparingly; not plentifully.

* **PENURIOUSNESS**, *n. f.* [from *penurious*.] 1. Niggardliness; parsimony.—If we consider the infinite industry and *penuriousness* of that people, it is no wonder that, notwithstanding they furnish as great taxes as their neighbours, they make a better figure. *Addison*. 2. Scantiness; not plenty.

* **PENURY**, *n. f.* [*penuria*, Lat.] Poverty; indigence.—The *penury* of the ecclesiastical estate.

Hooker.—
Thy great mother Venus first thee bare,
Begot of plenty and of *penury*. *Spenser*.

Crushing penury
Persuades me, I was better when a king;
Then I am king'd again. *Shak. Richard III.*
—All innocent, they were exposed to hardship and *penury*. *Spratt*.—

Still to divert the good design'd,
Or with malignant *penury*
To starve the royal virtues of his mind. *Dryd.*

May they not justly to our climes upbraid
Shortness of night, and *penury* of shade? *Prior*!

PENZA, a town of Russia, capital of the prov. of

of Penzenskoe, near the Sura; 316 miles ESE. of Moscow, and 644 SE. of Petersburg. Lon. 63. 24. E. Ferro. Lat. 53. 30. N.

PENZANCE. See PENSANCE.

PENZENSKOE, a province of Russia, bounded N. by Nizhegorodskoe, E. by Simbirskoe, S. by Saratovskoe, and W. by Tambovskoe; 172 miles long from E. to W. and from 40 to 60 broad, from N. to S. PENZA is the capital. Lon. 60. 10. to 65. 10. E. Ferro. Lat. 51. 40. to 54. 36. N.

PENZINSKAIA, a gulf of Russia, at the N. end of Penzinskoe Sea. Lon. 180. 0. E. Lat. 61° to 62° N.

PENZINSKOE SEA, a large bay of the N. Pacific Ocean, between Russia and Kamtschatka, NE. of Ochotk; about 130 miles long, and from 120 to 160 broad. Lon. 170° to 190° E. Ferro. Lat. 58° to 62° N.

PENZLEIN, a town of Mecklenburg; 37 miles SE. of Gustrów, and 53 E. of Stettin.

PEON, in the language of Hindoostan, a foot soldier, armed with sword and target. In common use, it is a footman, so armed, employed to run before a palanquin. *Piada* is the proper word, of which *peon* is a corruption.

(1.) * PEONY. *n. f.* [*peonia*, Latin.] A flower. *Miller*.—A physician had often tried the *peony* root unseasonably gathered without success. *Boyle*.

(2.) PEONY, or PIONY. See PÆONIA, N° 2.

(3.) * PEOPLE. *n. f.* [*peuple*, Fr. *populus*, Lat.] 1. A nation; those who compose a community. In this sense it is read *peoples*.—Prophecy again before many *peoples* and nations and tongues. *Rev. x. 11*.—Ants are a *people* not strong, yet they prepare their meat in summer. *Prov. xxx. 25*.—

What is the city but the *people*?
True, the *people* are the city. *Shak. Coriol.*

2. The vulgar.—
I must like beasts or common *people* die,
Unless you write my elegy. *Cowley*.

The knowing artist may
Judge better than the *people*. *Waller*.

3. The commonalty; not the princes or nobles.—
The *people* call'd them

Time-pleasers, flatterers. *Shak.*
Myself shall mount the rostrum in his favour.
And strive to gain his pardon from the *people*.

Addison.

4. Persons of a particular class.—If a man temper his actions to content every combination of *people*, the musick will be the fuller. *Bacon*.—A small red flower in the stubble fields country *people* call the wincope. *Bacon*. 5. Men, or persons in general. In this sense, the word *people* is used indefinitely, like *or* in French.—The frogs petitioning for a king, bid *people* have a care of struggling with heaven. *L'Esrange*.—*People* were tempted to lend by great premiums and large interest. *Swift*.—*People* have lived 24 days upon nothing but water. *Arbutnot*.—*People* in adversity should preserve laudable customs. *Clarissa*.

(2.) PEOPLE. See MORTALITY BILLS, § 2-7; POLITICAL ARITHMETIC, and POPULATION.

* TO PEOPLE. *v. a.* [*peupler*, Fr.] To stock with inhabitants.—Suppose that Brute, or whoever else that first *peopled* this island, had arrived upon Thames, and called the island after his name Britannia. *Raleigh's History*.—

He would not be alone, who all things can;
But *peopled* Heav'n with angels, earth with man.
Dryden.

Beauty a monarch is,
Which kingly power magnificently proves.
By crouds of slaves, and *peopled* empire loves.
Dryden.

A *peopled* city made a desert place. *Dryden*.

Imperious death directs his ebon lance;
Peoples great Henry's tombs. *Prior*.

(1.) PEOR, a famous mountain beyond Jordan, which Eusebius places between Heshbon and Livias. The mountains Nebo, Pisgah, and Peor, were near one another, and probably made the same chain. It is very likely that Peor took its name from some deity, for Peor, Phegor, or Baal-peor, was worshipped in this country. See Numb. xxv. 3. Deut. iv. 3. Psal. cv. 28. and BAAL PEOR.

(2.) PEOR, a city of Judah, which is not mentioned in the Hebrew, nor in the Vulgate, but only in the Greek of the Septuagint. (Josh. xv. 60.) Eusebius says it was near Bethlehem, and Jerom adds, that in his time it was called *Paora*.

PEPARETHOS, an island in the Ægean Sea, on the coast of Macedonia, 40 miles in circumference; famous for excellent wine and olives. *Plin. iv. 12. Ovid. Met. vii. 470. Liv. 28. 5.*

* PEPASTICKS. *n. f.* [*pepastics*, Gr.] Medicines which are good to help the rawness of the stomach and digest crudities. *Diis*.

PEPCHIDIACHIC, or PEPCHIDICHI, a cape of New Brunswick, on Chaleurs Bay.

PEPECHASSINAGAN, a river of Canada, which runs into the St Lawrence: in Lon. 68. 55. W. Lat. 48. 26. N.

PEPHINOS, a town of Laconia. *Paus. iii. 26.*

(1.) PEPIN DE HERISTAL, or LE GROS, mayor of the palace under Clovis III. Childbert, and Dagobert III. (See FRANCE, § 9.) The power of these mayors in France was so great, that they left the sovereign only the empty title, and in the end seized on the throne itself.

(2.) PEPIN LE PETIT, or LE BRIEF, (*i. e.* the short,) grandson to Pepin le Gros, and first king of the second race of French monarchs, was mayor of the palace to Childeric III. a weak prince: he contrived to confine him and his son Theudoric in different monasteries; and then, with the assistance of pope Stephen III. he usurped the sovereign power. He died in 768, aged 54. See FRANCE, § 10-12.

(3.) PEPIN, king of Italy. See FRANCE, § 16.

PEPLIS, in botany, a genus of the monogynia order, belonging to the hexandria class of plants; and in the natural method ranking under the 17th order, *Calycanthemæ*. The perianthium is campanulated; the mouth cleft in 12 parts; there are six petals inserted into the calyx; the capsule is bilocular.

PEPLOD, a town of Hindoostan, in Candesh; 80 miles S. of Indore, and 30 NE. of Burhampour.

PEPLUS, a long robe worn by the women in ancient times, reaching down to the feet, without sleeves, and so very fine, that the shape of the body might be seen through it. The Athenians used much ceremony in making the *peplus*, and dressing the statue of Minerva with it. Homer makes frequent mention of the *peplus* of that goddess.

B b 4 PEPONG,

PEPONG, two islands in the E. Indian Ocean, near the coast of China. Lon. 124. 46. E. Ferro. Lat. 23. 22. N.

PEPOZIANs, a sect of Christian heretics, who sprung up in the 3d century; a branch of the MONTANISTS.

(1.) * PEPPER. *n. f.* [*piper*, Lat. *poivre*, Fr.] We have three kinds of *pepper*: the black, the white, and the long, which are three different fruits produced by three distinct plants: black *pepper* is a dried fruit of the size of a vetch and roundish, but rather of a deep brown than a black colour: with this we are supplied from Java, Malabar, and Sumatra, and the plant has the same heat and fiery taste that we find in the *pepper*: white *pepper* is commonly facitious, and prepared from the black by taking off the outer bark, but there is a rarer sort, which is a genuine fruit, naturally white: long *pepper* is a fruit gathered while unripe and dried, of an inch or an inch and half in length, and of the thickness of a large goose quill. *Hill*.

Scatter o'er the blooms the pungent dust

Of *pepper*, fatal to the frosty tribe. *Thomson*.

(2.) PEPPER, PIPER, in natural history, an aromatic berry of a hot dry quality, chiefly used in seasoning. Pepper is principally used by us in food, to assist digestion: but the people in the East Indies esteem it as a stomachic, and drink a strong infusion of it in water by way of giving them an appetite; they have also a way of making a fiery spirit of fermented fresh pepper with water, which they use for the same purposes. They have also a way of preserving the common and long pepper in vinegar, and eating them afterwards at meals. There are 3 kinds of pepper at present used in the shops, the black, the white, and the long pepper.

I. PEPPER, BLACK, is the fruit of the piper, and is brought from the Dutch settlements in the East Indies. See PIPER.

II. PEPPER, LONG, is a dried fruit, of an inch or an inch and an half in length, and about the thickness of a large goose quill: it is of a brownish grey colour, cylindrical in figure, and produced on a plant of the same genus.

III. PEPPER, WHITE, is facitious, being prepared from the black in the following manner: they steep this in sea-water, exposed to the heat of the sun for several days, till the rind or outer bark loosens; they then take it out, and, when it is half dry, rub it till the rind falls off; then they dry the white fruit, and the remains of the rind blow away like chaff. A great deal of the heat of the pepper is taken off by this process, so that the white kind is more fit for many purposes than the black. However, there is a sort of native white pepper produced on a species of the same plant; which is much better than the facitious, and indeed little inferior to the black.

(3.) PEPPER, BARBARY. See CAPSICUM, N° 6.

(4.) PEPPER, BELL. See CAPSICUM, N° 10.

(5.) PEPPER, BIRD. See CAPSICUM, N° 7.

(6.) PEPPER, GUINEA. See CAPSICUM, N° 1.

(7.) PEPPER, HEN. See CAPSICUM, N° 4.

(8.) PEPPER, JAMAICA. See MYRTUS, N° II, § 2: and PIMENTO.

(9.) PEPPER, POOR MAN'S. See LEPIDIUM.

(10.) PEPPER TREE. See AVA-AVA; MIDDLEBURG, N° 3; and VITIS.

(11.) PEPPER, WALL. See SEDUM, N° 1.

(12.) PEPPER, WATER, a species of POLYGNUM.

(13.) PEPPER, WATER, a liquor prepared by putting common black pepper, grossly powdered, into an open vessel of water. In a few days it acquires a pellicle or thin surface, which is composed entirely of animalcules excellently adapted for microscopic observation.

* To PEPPER. *v. a.* [from the noun.] 1. To sprinkle with pepper. 2. To beat; to mangle with shot or blows.—I have peppered two of them; two I have paid, two rogues in buckram suits. *Shak. Henry IV.*

PEPPER BAY, a bay on the W. coast of Java; 30 miles SSW. of Bantan.

PEPPERBERG, a town of Java, on the S. coast, 75 miles S. of Batavia.

* PEPPERBOX. *n. f.* [*pepper* and *box*.] A box for holding pepper.—I will not take the leacher; he cannot creep into a halfpenny purse, nor into a pepperbox. *Shak.*

* PEPPERCORN. *n. f.* [*pepper* and *corn*.] Any thing of inconsiderable value.—Our performances, though dues, are like those peppercorns which freeholders pay their landlord to acknowledge that they hold all from him. *Boyle*.—

Folks from mud-wall'd tenement

Bring landlords peppercorn for rent. *Prior*.

PEPPERELL, a township of Massachusetts, on the Nashua, 40 miles N. by W. of Boston; containing 1132 citizens in 1795.

PEPPERELLBOROUGH, a township of Maine, in York county, containing 1352 citizens in 1795; seated on the NE. bank of the Saco, 12 miles SW. of Portland, and 109 N. of Boston.

PEPPER GRASS. See PILULARIA.

(1.) * PEPPERMINT. *n. f.* [*pepper* and *mint*; *piperitis*.] Mint eminently hot.

(2.) PEPPER-MINT. See MENTHA, N° 1.

(3.) PEPPER-MINT TREE, in botany, the *Eucalyptus piperita*. In a journal of a voyage to New South Wales, by John White, Esq; we have a plate of this tree, (See Plate 272.) with the following account of it: "This tree grows to the height of more than 100 feet, and is above 30 feet in circumference. The bark is very smooth, like that of the poplar. The younger branches are long and slender, angulated near the top; but as they grow older, the angles disappear. Their bark is smooth, and of a reddish brown. The leaves are alternate, lanceolate, pointed, very entire, smooth on both sides, and remarkably unequal or oblique at their base; the veins alternate and not very conspicuous. The whole surface of both sides of the leaves is marked with numerous minute resinous spots, in which the essential oil resides. The foot stalks are about half an inch in length, round on the under side, angular above, quite smooth. The flowers we have not seen. What Mr White has sent as the ripe capsules of this tree (although not attached to the specimens of the leaves) grow in clusters, from 6 to 8 in each, sessile and conglomerated. These clusters are supported on angular alternate footstalks, which form a kind of panicle. Each capsule is about the size of an hawthorn berry, globular, but as it were cut off."

at the top, rugged on the outside, hard and woody, and of a dark brown colour. At the top is a large drifce, which shows the internal part of the capsule divided into four cells, and having a square column in the centre, from which the partitions of the cell arise. These partitions extend to the rim of the capsule, and terminate in four small projections, which look like the teeth of a calyx. The seeds are numerous, small, and angular. The name of *peppermint tree* has been given to this plant by Mr White, on account of the very great resemblance between the essential oil drawn from its leaves and that obtained from the peppermint (*MENTHA PIPERITA*) which grows in England. This oil was found by Mr White to be much more efficacious in removing all cholicky complaints than that of the English peppermint, which he attributes to its being less pungent and more aromatic. A quart of the oil has been sent by him to Mr Willon. The tree appears to be undoubtedly of the same genus with that cultivated in some greenhouses in England, which Mr L'Heritier has described in his *Sertum Anglicum* by the name of *Eucalyptus obliqua*, though it is commonly called in the gardens *Metrodideros obliqua*; but we dare not assert it to be the same species, nor can this point be determined till the flowers and every part of both be seen and compared: we have compared the best specimens we could procure of each, and find no specific difference. The *eucalyptus obliqua* has, when dried, an aromatic flavour, somewhat similar to our plant. We have remarked, indeed, innumerable minute white spots, besides the resinous ones, on both surfaces of the leaves in some specimens of the garden plant, which are not to be seen in ours; and the branches of the former are rough, with small scaly tubercles. But how far these are constant, we cannot tell. The obliquity in the leaves, one side being shorter at the base than the other, as well as somewhat narrower all the way up, as in the *Begonia nitida* of the *Hortus Kewensis*, is remarkable in both plants. The figure represents a branch of the peppermint tree in leaf: on one side of it part of a leaf separate, bearing the gall of some insect; on the other the fruit above described."

PEPPER-POT. See CAPSICUM.

(1.) *PEPPERWORT. *n. f.* [*pepper and wort.*] A plant. *Miller*.

(2.) PEPPER-WORT. See LEPIDIUM.

*PEPTICK. *adj.* [*peiticos.*] What helps digestion. *Ainsl.*

PEPUSCH, John Christopher, Mus. D. and F. R. S. One of the greatest theoretic or scientific musicians of modern times, was born at Berlin in 1667. In 1680, when not 15 years, he had made such proficiency on the harpsichord, that he was appointed to teach music to the prince royal of Prussia. About 1700, he came over to England, and was engaged at Drury-lane. The popularity of Handel kept him in the secondary rank; but Pepusch chose a new track for himself, and taught music in the full sense of the word; i. e. the principles of harmony and the science of composition,—not to children or novices, but to professors of music themselves, who actually at-

tended him; so much were his talents and judgment respected. In 1713, the university of Oxford admitted him Doctor of Music. In 1714, he accepted an offer from Dr Berkeley to go with him to Bermudas, as professor of music in his intended college; but the ship being wrecked, he returned to London, and married Frances Margaret De L'Epine, who had made a fortune of 10,000 guineas by her voice at the operas. (See MUSIC, § 72.) His fortune and reputation were now at a height. At the desire of Messrs Gay and Rich, he composed the music for the *Beggar's Opera*. In 1737, he was chosen organist for the Charter-house. In 1740, his wife died, a short time after their only son. He wrote *An Account of the Ancient Genera of Music*, which was read before the Royal Society, and published in the *Philos. Trans.* for Oct. Nov. and Dec. 1736; and was soon after chosen F. R. S. He died July 20, 1752, aged 85.

PEPPY'S ISLAND, an island in the South Sea, 24 miles E. of Cape Blanco, in Patagonia. Lat. 47. 0. S.

PEPYS'S ISLANDS, a name given to FALKLAND ISLANDS.

PEQUANNOCK, a river of Connecticut, which runs S. through Huntington and Stratford, in Fairfield county, and falls into a bay in the Sound.

PEQUIGNY, a town of France, in the dep. of Somme, and late prov. of Picardy; seated on the Somme, 15 miles SE. of Abbeville. It is memorable for an interview between Edward IV. of England and Lewis XI. of France, in 1475, on a bridge erected for that purpose. Lon. 2. 5. E. Lat. 49. 58. N.

PEQUOTS, a nation of North American Indians, extirpated in 1637. See CONNECTICUT, N° III. § 8.

PER, *prep.* [Lat.] By, or through; a word so completely adopted into the English language, as to be understood by the most illiterate. It is not only used in conjunction with Latin words, as *per annum*, by the year, *per diem*, by the day, *per se*, by itself, &c. but with English words, as *per bearer*, *per carrier*, *per cent.* *per margin*, &c. It is also much used in composition.

(1.) PERA, one of the suburbs of Constantinople, where ambassadors and Christians usually reside: See CONSTANTINOPLE, § 1.

(2.) PERA, a sea-port town of Malacca, 170 miles NW. of Malacca.

*PERACUTE. *adj.* [*peracutus*, Latin.] Very sharp; very violent.—Malign, continual *peracute* fevers, after most dangerous attacks, suddenly remit of the ardent heat. *Harvey*.

*PERADVENTURE. *adv.* [*par adventure*, Fr.] 1. Perhaps; may be; by chance.—That wherein they might not be like unto either, was such *peradventure* as had been no whit less unlawful. *Hooker*.—As you return, visit my house; let our old acquaintance be renew'd; *peradventure* I will with you to court. *Shak*.—What *peradventure* may appear very full to me, may appear very crude and maimed to a stranger. *Digby*. 2. Doubt; question. It is sometimes used as a noun, but not gracefully nor properly.—Though men's persons ought

ought not to be hated, yet without all *peradventure* their practices justly may. *South.*

• To PERAGRATE. *v. a.* [*peragro*, Lat.] To wander over; to ramble through. *Diß.*

* PERAGRATION. *n. f.* [from *peragrate*.] The act of passing through any state or space.—A month of *peragrati* is the time of the moon's revolution from any part of the zodiack unto the same again, and this containeth but 27 days and 8 hours. *Brown.*—The moon has two accounts, which are her months or years of revolution; one her periodic month, or month of *peragrati*, which chiefly respects her own proper motion or place in the zodiack, by which she, like the sun, performs her revolution round the zodiack, from any one point to the same again. *Holder.*

* To PERAMBULATE. *v. a.* [*perambulo*, Lat.] 1. To walk through. 2. To survey by passing through.—Persons the lord deputy should nominate to view and *perambulate* Irish territories. *Davies.* 3. To visit the boundaries of the parish.

* PERAMBULATION. *n. f.* [from *perambulate*.] 1. The act of passing through or wandering over.—The duke looked still for the coming back of the Armada, even when they were wandering and making their *perambulation* of the northern seas. *Bacon.* 2. A travelling survey.—France is a square of 550 miles traverse, thronging with such multitudes, that the general calcul, made in the last *perambulation*, exceeded 18 millions. *Houel.* 3. A district; limit of jurisdiction.—It might in point of conscience be demanded, by what authority a private person can extend a personal correction beyond the persons and bounds of his own *perambulation*? *Holyday.* 4. Survey of the bounds of the parish annually performed.

PERAMBULATOR, in surveying, an instrument for measuring distances, called also *pedometer*, *way-wiser*, and *surveying-wheel*. See PEDOMETER. It consists of a wheel AA, Plate CCLXVI. fig. 7. two feet seven inches and a half in diameter; consequently half a pole, or eight feet three inches, in circumference. On one end of the axis is a nut, three quarters of an inch in diameter, and divided into eight teeth; which, upon moving the wheel round, fall into the eight teeth of another nut c, fixed on one end of an iron rod Q, and thus turn the rod once round in the time the wheel makes one revolution. This rod, lying along a groove in the side of the carriage of the instrument, under the dotted line, has at its other end a square hole, into which is fitted the end b of a small cylinder P. This cylinder is disposed under the dial-plate of a movement, at the end of the carriage B, in such a manner as to be moveable about its axis; its end a is cut into a perpetual screw, which falling into the 32 teeth of a wheel perpendicular thereto, upon driving the instrument forward, that wheel makes a revolution each 16th pole. On the axis of this wheel is a pinion with six teeth, which, falling into the teeth of another wheel of 60 teeth, carries it round every 160th pole, or half a mile. This last wheel, carrying a hand or index round with it over the divisions of a dial-plate, whose outer limb is divided into 160 parts, corresponding to the 160 poles, points out the number of poles passed

over. Again, on the axis of this last wheel is a pinion, containing 20 teeth, which, falling into the teeth of a third wheel which hath 40 teeth, drives it once round in 320 poles, or a mile. On the axis of this wheel is a pinion of 12 teeth, which, falling into the teeth of a fourth wheel having 72 teeth, drives it once round in 12 miles. This fourth wheel, carrying another index over the inner limb of the dial-plate, divided into 12 for miles, and each mile subdivided into halves, quarters, and furlongs, serves to register the revolutions of the other hand, and to keep account of the half miles and miles passed over, as far as 12 miles. The use of this instrument is obvious from its construction. Its proper office is in the surveying of roads and large distances, where a great deal of expedition, and not much accuracy, is required. It is evident, that driving it along and observing the hands has the same effect as dragging the chain and taking account of the chains and links. Its advantages are its hardness and expedition: its contrivance is such, that it may be fitted to the wheel of a coach, in which state it performs its office, and measures the road without any trouble at all.

PERASTA, a town of Turkey, in Romania.

PERCA, the PERCH, a genus of fishes belonging to the order of thoracici. The head is furnished with scaly and serrated opercula; there are seven rays in the membrane of the gills; and the fins on the back are prickly. There are 38 species, principally distinguished by peculiarities in the back fin. The most remarkable are these:

1. PERCA CERNUA, the POPE, or *ruffe*, is found in several English streams: it is gregarious, assembling in large shoals, and keeping in the deepest part of the water. It is of a much more slender form than the perch, and seldom exceeds six inches in length. The teeth are very small, and disposed in rows. It has only one dorsal fin, extending along the greatest part of the back; the first rays, like those of the perch, are strong, sharp, and spiny; the others soft. The body is covered with rough compact scales. The back and sides are of a dirty green, the last inclining to yellow, but both spotted with black. The dorsal fin is spotted with black; the tail marked with transverse bars.

2. PERCA FLUVIATILIS, or common perch, hath a deep body, very rough scales, and the back much arched. The colours are beautiful; the back and part of the sides being of a deep green, marked with five broad black bars pointing downwards; the belly is white, tinged with red; the ventral fins of a fine scarlet; the anal fins and tail of the same colour, but rather paler. In a lake called *Llyn Raitblyn*, in Merionethshire in Wales, is a very singular variety of this fish: the back part is quite hunched, and the lower part of the back-bone next the tail strangely distorted: in colour and other respects it resembles the common perch, which are as numerous in this lake as the deformed fish. They are not peculiar to this water; for Linnæus takes notice of them in a lake at Fahlun in his country. It is said that they are also met with in the Thames near Marlow. The perch was much esteemed as food by the Romans, nor is it less admired at present as a firm and delicate

scate fish; and the Dutch are particularly fond of it when made into a dish called *water-foushy*. It is a gregarious fish, and loves deep holes and gentle streams; is exceedingly voracious, and an eager biter: if the angler meets with a shoal of them, he is sure of taking every one.—The perch is very tenacious of life, and has been known to survive a journey of 60 miles in dry straw. It seldom grows to a large size, though Mr Pennant mentions one that weighed 9 lb.; but this is very uncommon.

3. PERCA LABRAX, the *basse*, is a very voracious, strong, and active fish. Ovid calls them *rabidi lupi*, a name continued to them by after writers; and they are said to grow to the weight of 15 lb. The irides are silvery; the mouth large; the teeth are situated in the jaws, and are very small; in the roof of the mouth is a triangular rough space, and just at the gullet are two others of a roundish form. The scales are of a middling size, are very thick set, and adhere closely. The body is formed somewhat like that of a salmon. The colour of the back is dusky, tinged with blue. The belly is white. In young fish the space above the side line is marked with small black spots.—It is esteemed a very delicate fish.

4. PERCA MARINA, the *sea perch*, is about a foot long: the head large and deformed; eyes great; teeth small and numerous. On the head and covers of the gills are strong spines. The colour red, with a black spot on the covers of the gills, and some transverse dusky lines on the sides. It is a fish held in some esteem at the table.

5. PERCA NILOTICA, the *perch of the Nile*, is taken about Cairo. The flesh has a sweet and exquisite flavour, and is not hard, but very white. It is one of the best fishes in the Nile; and as it is of the largest size in Egypt, it adorns a table if brought upon it entire and well fried. See PILOT-FISH.

* PERCASE. *adv.* [*per* and *case*.] Perchance; perhaps. Not used.—A virtuous man will be virtuous in solitude, and not only in theatres, though *percase* it will be more strong by glory and fame, as an heat which is doubled by reflection. *Bacon*.

* PERCEANT. *adj.* [*perçant*, Fr.] Piercing; penetrating. Obsolete.—

Wondrous quick and *perceant* was his spright,
As eagle's eyes that can behold the sun. *Spenser*.

* PERCEIVABLE. *adj.* [from *perceive*.] Perceptible; such as falls under perception.—The body, though it really moves, yet not changing *perceivable* distance with some other bodies, as fast as the ideas of our own minds will follow one another, seems to stand still; as the hands of clocks. *Locke*.—That which we perceive when we see figure, as *perceivable* by sight, is nothing but the termination of colour. *Locke*.

* PERCEIVABLY. *adv.* [from *perceivable*.] In such a manner as may be observed or known.

* To PERCEIVE *v. a.* [*percipio*, Lat.] 1. To discover by some sensible effects.—

Consider,

When you above *perceive* me like a crow,
That it is place which lessens and sets off. *Shak*.

2. To know; to observe.—Jesus *perceived* in his spirit that they so reasoned within themselves. *Mark ii.*—They are brought low, but he *perceiveth*

it not. *Job xiv. 21.*—Till we ourselves see it with our own eyes, and *perceive* it by our own understandings, we are still in the dark. *Locke*.—How do they come to know that themselves think, when they themselves do not *perceive* it? *Locke*. 3. To be affected by.—The upper regions of the air *perceive* the collection of the matter of tempests before the air here below. *Bacon*.

* PERCEPTIBILITY. *n. f.* [from *perceptible*.] 1. The state of being an object of the senses or mind; the state of being perceptible. 2. Perception; the power of perceiving. Not proper.—The illumination is not so bright and fulgent as to obscure or extinguish all *perceptibility* of the reason. *Mare*.

* PERCEPTIBLE. *adj.* [*perceptible*, Fr. *perceptus*, Lat.] Such as may be known or observed.—No sound is produced but with a *perceptible* blast of the air, and with some resistance of the air strucken. *Bacon*.—When I think, remember, or abstract, these intrinsic operations of my mind are not *perceptible* by my sight, hearing, taste, smell, or feeling. *Hale*.—It perceives them immediately, as being immediately objected to and *perceptible* to the sense; as I perceive the sun by my sight. *Hale*.—In the anatomy of the mind, as of the body, more good will accrue to mankind by attending to the large, open, and *perceptible* parts, than by studying too much finer nerves. *Pope*.

* PERCEPTIBLY. *adv.* [from *perceptible*.] In such a manner as may be perceived.—The woman decays *perceptibly* every week. *Pope*.

(1.) * PERCEPTION. *n. f.* [*perception*, Fr. *perceptio*, Latin.] 1. The power of perceiving; knowledge; consciousness.—Matter hath no life nor *perception*, and is not conscious of its own existence. *Bentley*.—*Perception* is that act of the mind, or rather a passion or impression, whereby the mind becomes conscious of any thing; as when I feel hunger, thirst, cold, or heat. *Watts*. 2. The act of perceiving; observation. 3. Notion; idea.—By the inventors, and their followers, that would seem not to come too short of the *perceptions* of the leaders, they are magnified. *Hale*. 4. The state of being affected by something.—Great mountains have a *perception* of the disposition of the air to tempests sooner than the valleys below. *Bacon*.—This experiment discovereth *perception* in plants to move towards that which should comfort them, though at a distance. *Bacon*.

(2.) PERCEPTION is a word which is so well understood, that it is difficult for the lexicographer to give any explanation of it. It has been called the first and most simple act of the mind, by which it is conscious of its own ideas. This definition, however, is improper, as it confounds perception with consciousness; although the objects of the former faculty are things without us, those of the latter the energies of our own minds. Perception is that power or faculty by which, through the medium of the senses, we have the cognizance of objects distinct and apart from ourselves, and learn that we are but a small part in the system of nature. By what process the senses give us this information, we have endeavoured to show elsewhere. See METAPHYSICS, Sect. VI.

* PERCEPTIVE.

* **PERCEPTIVE**. *adj.* [*perceptus*, Lat.] Having the power of perceiving.—The soul is awake and solicited by external motions, for some of them reach the *perceptive* region in the most silent repose and obscurity of night. *Glanville*.—Whatever the least real point of the essence of the *perceptive* part of the soul does perceive, every real point of the *perceptive* must perceive at once. *More*.

* **PERCEPTIVITY**. *n. f.* [from *perceptive*.] The power of perception or thinking. *Locke*.

(1.) * **PERCH**. *n. f.* [*perca*, Lat. *perce*, Fr.]—The *perch* is one of the fishes of prey, that, like the pike and trout, carries his teeth in his mouth; he dare venture to kill and destroy several other kinds of fish: he has a hooked or hog back, which is armed with stiff bristles, and all his skin armed with thick hard scales, and hath two fins on his back: he spawns but once a year, and is held very nutritive. *Walton*.

(2.) **PERCH**, in ichthyology. See **PERCA**.

(3.) * **PERCH**. *n. f.* [*percha*, Lat. *perche*, Fr.] 1. A measure of five yards and an half; a pole. 2. [*perche*, Fr.] Something on which birds roost or sit.

For the narrow *perch* I cannot ride. *Dryden*.

(4.) **PERCH**, in land-measuring, a rod or pole of 16½ feet in length, of which 40 in length and 4 in breadth make an acre of ground. But, by the customs of several counties, there is a difference in this measure. In Staffordshire, it is 24 feet; and in the forest of Sherwood 25 feet; the foot being there 18 inches long; and in Herefordshire a *perch* of ditching is 21 feet, the *perch* of walling 16½ feet, and a pole of deniered ground is 12 feet, &c.

(1.) * To **PERCH**. *v. n.* [*percher*, Fr. from the noun.] To sit or roost as a bird.

He *percheth* on some branch thereby,

To weather him.

Spenser.

Wrens make prey, where eagles dare not *perch*.

Shakspeare.

The morning mules *perch* like birds. *Crahaev*.

—Let owls keep close within the tree, and not *perch* upon the upper boughs. *South*.

They wing'd their flight aloft, then stooping low,

Perch'd on the double tree.

Dryden.

Glory, like the trembling eagle, stood

Perch'd on my beaver.

Lee.

Hosds of birds that wing the liquid air,

Perch'd in the boughs.

Dryden.

(2.) * To **PERCH**. *v. a.* To place on a perch.—It would be notoriously perceptible, if you could *perch* yourself as a bird on the top of some high steeple. *More*.

As evening dragon came,

Affailant on the *perched* roofs.

Milton.

* **PERCHANCE**. *adv.* [*per* and *chance*.] Perhaps; peradventure.—

How long within this wood intend you stay?

—*Perchance* till after Theseus' wedding day.

Shak.

—Not without aim then *perchance* at a courtier's life. *Wotton*.—Only Smithfield ballad *perchance* to embalm the memory of the other. *L'Étrange*.

PERCHE, a ci-devant territory of France, in the late prov. of Orleannois, 35 miles long, and 30 broad; bounded on the N. by Normandy; S.

by Maine and Dunois; E. by Beauce; and W. by Maine. It was named from a forest, and is pretty fertile. It now forms the department of ORNE, with a part of Normandy. The inhabitants carry on a pretty good trade; and the principal town is Bellesme.

* **PERCHERS**. *n. f.* Paris candles used in England in ancient times; also, the larger sort of wax candles, which were usually set upon the altar. *Bailey*.

(1.) * **PERCIPIENT**. *adj.* [*percipiens*, Lat.] Perceiving; having the power of perception.—No article of religion hath credibility enough for them: yet these cautious and quicksighted gentlemen can wink and swallow this forthright opinion about *percipient* atoms. *Bentley*.—Sensation and perception are not inherent in matter as such; for if it were so, every stock or stone would be a *percipient* and rational creature. *Bentley*.

(2.) * **PERCIPIENT**. *n. f.* One that has the power of perceiving.—The soul is the sole *percipient*, which hath animadversion and sense properly so called. *Glanville's Sceptis*.—Nothing in the extended *percipient* perceives the whole, but only part. *More's Divine Dialogues*.

* **PERCLOSE**. *n. f.* [*per* and *close*.] Conclusion; last part. Obsolete.—By the *perclose* of the same verse, vagabond is understood for such an one as travelld in fear of revengement. *Raleigh*.

* To **PERCOLATE**. *v. a.* [*percolo*, Lat.] To strain through.—The evidences of fact are *percolated* through a vast period of ages. *Hale*.

(1.) * **PERCOLATION**. *n. f.* [from *percolate*.] The act of straining; purification or separation by straining.—Experiments touching the straining and passing of bodies one through another, they call *percolation*. *Bacon*.—Water passing through the veins of the earth is rendered fresh and potable, which it cannot be by any *percolations* we can make, but the saline particles will pass through a tenfold filtre. *Ray on the Creation*.

(2.) **PERCOLATION** is the same with **FILTRATION**. See **FILTER**, § 2. and **FILTRATION**.

* To **PERCUSS**. *v. a.* [*percussus*, Latin.] To strike.—Flame *percussed* by air giveth a noise; as in blowing of the fire by bellows; and so likewise flame *percussing* the air strongly. *Bacon*.

(1.) * **PERCUSSION**. *n. f.* [*percussio*, Latin, *percussion*, Fr.] 1. The act of striking; stroke.—

The thunder-like *percussion* of thy founds. *Shak.*

—The *percussion* of the greater quantity of air is produced by the greatness of the body *percussing*. *Bacon*.—The times when the stroke or *percussion* of an envious eye doth most hurt are, when the party envied is beheld in glory. *Bacon's Essays*.—The vibrations or tremors excited in the air by *percussion*, continue a little time to move from the place of *percussion* in concentric spheres to great distances. *Newton's Opticks*.—Marble taught him *percussion* and the laws of motion. *Arbutnot*. 2. Effect of the found in the ear.—

In double rhymes the *percussion* is stronger.

Rhymer.

(2.) **PERCUSSION**, in mechanics, the impression a body makes in falling or striking upon another; or the shock of two bodies in motion.

* **PERCUTIENT**. *n. f.* [*percutiens*, Latin.] Striking; having the power to strike.—Inequality of

of sounds is accidental, either from the roughness or obliquity of the passage, or from the doubling of the *percutient*. *Bacon*.

PERCY, or PERSY, a town of France, in the dep. of the Channel; 12 miles W. of St Loos, and 15 N. of Avranches.

(1.) PERDIAL, *adj.* [from *per*, Lat. by, and *di*, day.] Daily, or by the day.

(2.) PERDIAL TYTHES. See PARSON, § 1.

PERDICCAS, I, II, and III, kings of Macedonia. See MACEDON, § 3, 5, 6.

PERDICUM, in botany, a genus of the polygamia superflua order, belonging to the syngenesia class of plants; and in the natural method ranking under the 49th order, *compositae*. The receptacle is naked; the pappus is simple; the florets bilabiate.

PERDIGO, a river of W. Florida, which runs into the Gulf of Mexico; and forms a large bay at its mouth; in Lon. 87. 26. W. Lat. 30. 20. N.

* PERDITION. *n. f.* [*perditio*, Lat. *perdition*, Fr.] 1. Destruction; ruin; death.—Upon tidings now arrived, importing the more *perdition* of the Turkish fleet, every man puts himself in triumph. *Shak.*—We took ourselves for free men, seeing there was no danger of our utter *perdition*, and lived most joyfully; going abroad, and seeing what was to be seen. *Bacon.*

Quick let us part! *Perdition's* in thy presence,
And horror dwells about thee! *Addison's Cato.*

2. Loss.—

There's no foul lost,

Nay not so much *perdition* as his hair

Betide to any creature in the vessel. *Shak.*

3. Eternal death.—All men's salvation and some men's endless *perdition* are things so opposite, that whoever doth affirm the one, must necessarily deny the other. *Hooker.*—Men, once fallen away from undoubted truth, daily travel towards their eternal *perdition*. *Raleigh's History.*

PERDITOLS. See PERENNIAL, § 2.

PERDIX, in ornithology, a genus of birds, belonging to the order of Gallinæ, ranked by Linnaeus along with the genus TETRAO, or GROUS; but now very properly disjoined by Dr Latham, and classed as a distinct genus; of which he describes the following characters: The bill is convex, strong, and short; the nostrils are covered above with a callous prominent rim: the orbits are papillose; the feet naked; and most of the genus are furnished with spurs. There are 48 species; of which the two principle are the Partridge and Quail.

1. PERDIX COMMUNIS, the common partridge, is so well known, that a description of it is unnecessary, and we have not room to describe the foreign species. We refer those who wish complete information to Dr Latham's valuable System of Ornithology. Partridges are found in every country and in every climate; as well in the frozen regions about the pole, as the torrid tracks under the equator. In Greenland, the partridge, which is brown in summer, as soon as the icy winter sets in, is clothed with a warm down beneath; and its outward plumage assumes the colour of the snow, among which it seeks its food. Those of Barakonda, on the other hand, are longer legged,
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much swifter of foot, and choose the highest rocks and precipice to reside in. They all, however, agree in one character, of being immoderately addicted to venery; and, as some writers affirm, often to an unnatural degree. See PARTRIDGE, and SHOOTING.

2. PERDIX COTURNIX, or common quail, is not above half the size of the partridge. The feathers of the head are black, edged with rusty brown; the breast is of a pale yellowish red, spotted with black; the feathers on the back are marked with lines of pale yellow, and the legs are of a pale hue. Except in the colours thus described, and the size, it every way resembles a partridge in shape, and, except that it is a bird of passage, it is like all others of the poultry kind in its habits and nature. The quail seems to be an inhabitant of every climate. It is observed to shift quarters according to the season, coming N. in spring, and departing in autumn, and in vast flocks. On the West coast of Naples, within 4 or 5 miles, 100,000 have been taken in a day. In England they are not numerous at any time. They feed like the partridge, and make no nest, except a few dry leaves or stalks scraped together; and sometimes an hollow on the bare ground suffices. In this the female lays 6 or 7 eggs, of a whitish colour, marked with irregular rust coloured spots: the young follow the mother as soon as hatched, like young partridges. They have but one brood in a year. Quail-fighting was a favourite amusement among the Athenians. They obtained from the flesh of this bird, deeming it unwholesome, as supposing that it fed upon the white hellebore: but they reared great numbers of them for the pleasure of seeing them fight; and staked sums of money, as we do with regard to cocks, upon the success of the combat. With us its flesh is considered as a very great delicacy.—Quails are easily caught by a call.

PERDOLI, a town of Imperial Istria; 4 miles NNW. of Pola.

(1.) * PERDUE. *adv.* [This word, which among us is abervially taken, comes from the French *perdue*, or forlorn hope: as *perdue* or advanced centinel.] Close; in ambush.—

Few minutes he had lain *perdue*,

To guard his desperate avenue. *Hudibras.*

(2.) PERDUE BAY, a bay on the SW. coast of St Vincent; a mile NW. of Kingston Bay.

* PERDULOUS. *adj.* [from *perdo*, Latin.] Lost; thrown away.—There may be some wandering *perdulous* wishes of known impossibilities; as a man who hath committed an offence, may wish he had not committed it. *Bramhall.*

* PERDURABLE. *adj.* [*perdurable*, Fr. *perduro*, Latin.] Lasting; long continued. A word not in use, nor accented according to analogy.—Confess me knit to thy deservings with cables of *perdurable* toughness. *Shak. Othello.*

O *perdurable* shame; let's stab ourselves. *Shak.*
The vig'rous sweat

Doth lend the lively springs their *perdurable* heat.

Drayton.

* PERDURABLY. *adv.* [from *perdurable*.] Lastingly.—

Why would he for the momentary trick,
Be *perdurably* fin'd. ... *Shak. Meas. for Meas.*
C c * PERDURATION

* **PERDURATION.** *n. f.* [*perduration*, Lat.] Long continuance. *Ainsworth.*

PEREASLAW, a strong populous town of Poland, in the palatinate of Kiovia, situated on the river Trebecz. Lon. 32. 44. E. Lat. 49. 46. N.

* **PEREGAL.** *adj.* [Fr.] Equal. Obsolete.—Whilom thou wast *peregal* to the best. *Spens.*

* **PEREGRINATE.** *v. n.* [*peregrinus*, Lat.] To travel; to live in foreign countries. *DiB.*

* **PEREGRINATION.** *n. f.* [from *peregrinus*, Lat.] Travel; abode in foreign countries.—It was agreed between them, what account he should give of his *peregrination* abroad. *Bacon's Henry VII.*—It is not amiss to observe the heads of doctrine, which the apostles agreed to publish in all their *peregrinations*. *Hammond.*—We reckon it only as the land of our *peregrination*, and aspire after a better country. *Burkey.*

* **PEREGRINE.** *adj.* [*peregrin*, old Fr. *peregrinus*, Latin.] Foreign; not native, not domestic.—The received opinion, that putrefaction is caused by cold or *peregrine* and preternatural heat, is but negation. *Bacon's Nat. Hist.*

* **PEREMPT.** *v. a.* [*peremptus*, Lat.] To kill; to crush. A law term.—Nor is it any objection, that the cause of appeal is *perempted* by the desertion of an appeal; because the office of the judge continues after such instance is *perempted*. *Ayliffe.*

* **PEREMPTION.** *n. f.* [*peremptio*, Lat. *peremptio*, Fr.] Cruelty; extinction. Law term.—This *peremption* of instance was introduced in favour of the publick. *Ayliffe.*

* **PEREMPTORILY.** *adv.* [from *peremptory*.] Absolutely; positively; so as to cut of all farther debate.—Norfolk denies them *peremptorily*. *Daniel.*—Not to speak *peremptorily* or conclusively, touching the point of possibility, till they have heard me deduce the means of the execution. *Bacon's Holy War.*—Some organs are so *peremptorily* necessary, that the extinguishment of the spirits doth speedily follow. *Bacon's Nat. Hist.*—In all conferences it was insisted *peremptorily*, that the king must yield to what power was required. *Clarendon.*—God's laws *peremptorily* injoin us, to partake of the holy sacrament. *Kettlewell.*—Some talk of letters before the deluge; but that is a matter of mere conjecture, and nothing can be *peremptorily* determined either the one way or the other. *Woodward.*—Never judge *peremptorily* on first appearances. *Clarissa.*

* **PEREMPTORINESS.** *n. f.* [from *peremptory*.] Positiveness; absolute decision; dogmatism.—*Peremptoriness* is of two sorts; the one a magistratishness in matters of opinion; the other a positiveness in relating matters of fact. *Government of the Tongue.*—Self-conceit and *peremptoriness* in a man's own opinion are not commonly reputed vices. *Tillotson.*

* **PEREMPTORY.** *adj.* [*peremptorius*, low Latin; *peremptaire*, Fr. from *peremptus*, killed.] Dogmatical; absolute; such as destroys all further expostulation.—

IF I entertain

As *peremptorie* a desire, to level with the plaine
A citie, where they loved to live; stand not
betwixt my ire
And what it aims at.

Chapman.

—As touching the apostle, wherein he was so resolute and *peremptory*, our Lord Jesus Christ made manifest unto him, even by intuitive revelation, wherein there was no possibility of error. *Hooker.*—He may have fifty-six exceptions *peremptorily* against the jurors, of which he shall shew no cause. *Spenser.*

Excuse it not, for I am *peremptory*. *Shak.*
Not death himself

In mortal fury is half so *peremptory*.

As we to keep this city.

Shak. K. John.

—Though the text and the doctrine run *peremptory* and absolute, whosoever denies Christ shall assuredly be denied by him; yet still there is a tacit condition, unless repentance intervene. *Saith.*—Learning was to give us a fuller discovery of our ignorance, and to keep us from being *peremptory* and dogmatical. *Collier.*—He would never talk in such a *peremptory* and discouraging manner, were he not assured, that he was able to subdue the most powerful opposition against the doctrine which he taught. *Addison on the Christian Religion.*

(1.) * **PERENNIAL.** *adj.* [*perennis*, Latin.] 1. Lasting through the year.—If the quantity were precisely the same in these *perennial* fountains, the difficulty would be greater. *Obeyne.* 2. Perpetual; unceasing.—The matter wherewith these *perennial* clouds are raised, is the sea that surrounds them. *Harvey.*

(2.) **PERENNIALS**, or **PERENNIAL FLOWERS**, in botany, a term applied to those plants whose roots will abide many years, whether they retain their leaves in winter or not. Those which retain their leaves are called *evergreens*; but such as cast their leaves are named *deciduous*, or **PERIDOLS**.

* **PERENNITY.** *n. f.* [from *perennitas*, Latin.] Equality of lasting through all seasons; perpetuity.—That springs have their origin from the sea, and not from rains and vapours, I conclude from the *perennity* of divers springs. *Derham.*

PEREUIL, a town of France, in the department of Charente; 12 miles from Angouleme.

PEREVOZ, a town of Russia, in Niznei Novogorod; 48 miles SSE. of Niznei Novogorod.

(1.) * **PERFECT.** *adj.* [*perfectus*, Lat. *parfait*, Fr.] 1. Complete; consummate; finished; neither defective nor redundant.—We count those things *perfect*, which want nothing requisite for the end whereto they were instituted. *Hooker.*—

Anon they move

In *perfect* phalanx.

Milton.

Uriel, no wonder if thy *perfect* fight

See far and wide.

Milton.

Whoever thinks a *perfect* work to see,

Thinks what ne'er was, nor is, nor e'er shall be.

Pope.

As full as *perfect* in a hair, as heart.

Pope.

2. Fully informed; fully skilful.—

Our men more *perfect* in the use of arms.

Shak.

In your state honour I am *perfect*.

Shak.

—I do not take myself to be so *perfect* in the privileges of Bohemia, as to handle that part. *Bacon.*

3. Pure; blameless; clear; immaculate. This is a sense chiefly theological.—

My parts, my title, and my *perfect* soul

Shall manifest me rightly.

Shak.

—Thou

—Thou shalt be *perfect* with the Lord thy God. *Deut. xviii.* 4. Confident; certain.—

Thou art *perfect* then, our ship hath touch'd upon

The deserts of Bohemia. *Shak.*

(3.) PERFECT implies something that has all the requisites of its nature and kind.

(3.) PERFECT CADENCE, in music. See CADENCE.

(4.) PERFECT TENSE, in grammar. See PRETERITE.

* To PERFECT. *v. a.* [*perfectus*, from *perficio*, Latin; *parfaire*, French.] 1. To finish; complete; to consummate; to bring to its due state.—If we love one another, God dwelleth in us, and his love is *perfected* in us. 1 *John* iv. 12.—

Beauty now must *perfect* my renown:

With that I govern'd him that rules this isle.

Waller.

—In substances, rest not in the ordinary complex idea commonly received, but enquire into the nature and properties of the things themselves, and thereby *perfect* our ideas of their distinct species. *Locke.*—Endeavour not to settle too many habits at once, lest by variety you confound them, and so *perfect* none. *Locke.*—

What toil did honest Curio take

To get one medal wanting yet,

And *perfect* all his Roman set?

Prior.

2. To make skilful; to instruct fully.—

Her cause and yours,

I'll *perfect* him withal.

Shak.

* PERFECTER. *n. f.* [from *perfect*.] One that makes *perfect*.—This practice was altered; they offered not to Mercury, but to Jupiter the *perfecter*. *Broomer.*

PERFECTIBILITY, a new word which we owe to the NEW PHILOSOPHY, which made so great a noise in the first stages of the French revolution. As far as we understand, the word *perfectibility* is pretended, in the writings of that dilastrous period, to mean the ultimate and absolute perfection to which man and society have a natural and necessary tendency; and which, we are told, neither the tyranny of kings nor the bigotry of priests can eventually restrain.

(1.) * PERFECTION. *n. f.* [*perfectio*, Lat. *perfectio*, Fr.] 1. The state of being *perfect*.—Man doth see a triple *perfection*; first a sensual; then an intellectual; lastly, a spiritual and divine. *Hooker.*

It is a judgment main'd and most imperfect,

That will confess *perfection* so could err

Against all rules of nature.

Shak.

—True virtue, being united to the heavenly grace of faith, makes up the highest *perfection*. *Milton.*—No human understanding being absolutely secured, from mistake by the *perfection* of its own nature, it follows that no man can be infallible. *Tillotson.*—

Many things impossible to thought

Have been by need to full *perfection* brought.

Dryden.

—Too few, or of an improper figure and dimension, to do their duty in *perfection*. *Blackmore.*—The question is not, whether gospel *perfection* can be fully attained; but whether you come as near it as a sincere intention and careful diligence can carry you. *Law.* 2. Something that occurs to

produce supreme excellence. In this sense it has a plural.—

What tongue can her *perfections* tell,

On whose each part all pens may dwell? *Sidney.*—An heroic poem requires, as its last *perfection*, the accomplishment of some extraordinary undertaking, which requires more of the active virtue than the suffering. *Dryden.* 3. Attribute of God.—If God be infinitely holy, just, and good, he must take delight in those creatures that resemble him most in these *perfections*. *Atterbury.* 4. Exact resemblance.

(II.) PERFECTION is divided, according to Chauvinus, into physical, moral, and metaphysical.

1. PERFECTION, METAPHYSICAL, TRANSCENDENTAL, or ESSENTIAL, is the possession of all the essential attributes, or of all the parts necessary to the integrity of a substance; or it is that whereby a thing has or is provided of every thing belonging to its nature. This is either absolute, where all imperfection is excluded, such as the perfection of God; or *secundum quid*, and in its kind.

2. PERFECTION, MORAL, is an eminent degree of virtue or moral goodness, to which men arrive by repeated acts of piety, beneficence, &c. This is usually subdivided into absolute or inherent, which is actually in him to whom we attribute it; and imputative, which exists in some other, and not in him it is attributed to.

3. PERFECTION, PHYSICAL, or NATURAL, is that whereby a thing has all its powers and faculties, and those too in full vigour; and all its parts both principal and secondary, and those in their due proportion, constitution, &c. in which sense man is said to be *perfect*, when he has a sound mind in a sound body. This perfection is by the schools frequently termed *integritas*, because a thing is enabled thereby to perform all its operations.

* To PERFECTIONATE. *v. a.* [*perfectio*, Fr. from *perfectio*.] To make *perfect*; to advance to perfection. This is a word proposed by *Dryden*, but not received, nor worthy of reception.—Painters and sculptors, chusing the most elegant natural beauties, *perfectionate* the idea, and advance their art above nature itself. *Dryden.*—He has founded an academy for the progress and *perfectionating* of painting. *Dryden.*

* PERFECTIVE *adj.* [from *perfect*.] Conducting to bring to perfection: with *of*.—Praise and adoration are actions *perfective* of our souls. *Mare.*—Eternal life shall not consist in endless love; the other faculties shall be employed in actions suitable to, and *perfective* of their natures. *Ray.*

* PERFECTIVELY. *adv.* [from *perfective*.] In such a manner as brings to perfection.—As virtue is seated fundamentally in the intellect, so *perfectively* in the fancy. *Grew.*

* PERFECTLY. *adv.* [from *perfect*.] 1. In the highest degree of excellence. 2. Totally; completely.—Chewing little sponges dipt in oil, when *perfectly* under water, he could longer support the want of respiration. *Boyle.*—Words recal to our thoughts those ideas only which they have been wont to be signs of, but cannot introduce any *perfectly* new and unknown simple ideas. *Locke.* 3. Exactly; accurately.—We know bodies and their properties most *perfectly*. *Locke.*

* **PERFECTNESS.** *n. f.* [from *perfect*.] 1. Completeness; consummate excellence; perfection. 2. Goodness; virtue. A scriptural word.—Put on charity, which is the bond of *perfectness*.

Col. iii. 14. 3. Skill.—

Is'this your *perfectness*?

Shak.

* **PERFIDIOUS.** *adj.* [*perfidus*, Lat. *perfidie*, Fr.] Treacherous; false to trust; guilty of violated faith.—

Tell me, *perfidious*, was it fit

To make my cream a perquisite?

Widow.

Expressing treachery; proceeding from treachery.—

I see thy fall

Determin'd, and thy hapless crew involv'd

In this *perfidious* fraud.

Milton.

* **PERFIDIOUSLY.** *adv.* [from *perfidious*.] Treacherously; by breach of faith.—

Perfidiously

He has betray'd your business.

Shak.

They eat *perfidiously* their words.

Hudibras.

—Can he not deliver us possession of such places as would put him in a worse condition, whenever he should *perfidiously* renew the war?

Swift.

* **PERFIDIOUSNESS.** *n. f.* [from *perfidious*.] The quality of being *perfidious*.—Some things have a natural deformity in them; as perjury, *perfidiousness*, and ingratitude.

Tillotson.

* **PERFIDY.** *n. f.* [*perfidia*, Lat. *perfidie*, Fr.] Treachery; want of faith; breach of faith.

* **PERFLABLE.** *adj.* [from *perflo*, Lat.] Having the wind-driven through.

* **TO PERFLATE.** *v. a.* [*perflo*, Lat.] To blow through.—If eastern winds did *perflate* our climates more frequently, they would clarify and refresh our air. *Harvey*.—The first consideration in building of cities, is to make them open, airy, and well *perflated*.

Arbutnot.

* **PERFLATION.** *n. f.* [from *perflate*.] The act of blowing through.—Miners, by *perflations* with large bellows, give motion to the air, which ventilates and cools the mines.

Woodward.

PERFORANS MANUS. See **ANATOMY**, § 213, 18.

* **TO PERFORATE.** *v. a.* [*perforo*, Lat.] To pierce with a tool; to bore.—Draw the bough of a low fruit tree newly budded without twisting, into an earthen pot *perforate* at the bottom, and then cover the pot with earth, it will yield a very large fruit. *Bacon's Nat. Hist.*—A *perforated* bladder does not swell.

Bogle.

The labour'd chyle pervades the pores, In all the arterial *perforated* throes. *Blackmore*.—The aperture was limited by an opaque circle placed between the eye-glass and the eye; and *perforated* in the middle with a little round hole, for the rays to pass through to the eye. *Newton's Opticks*.—Worms *perforate* the guts. *Arbutnot on Diet*.

* **PERFORATION.** *n. f.* [from *perforate*.] 1. The act of piercing or boring.—The likeliest way is the *perforation* of the body of the tree in several places one above another, and the filling of the holes. *Bacon*.—The industrious *perforation* of the tendons of the second joints of fingers and toes, and the drawing the tendons of the third joints through them. *More*. 2. Hole; place bored.—That the nipples should be made spongy, and

with such *perforations* as to admit passage to the milk, are arguments of providence. *Ray on the Creation*.

* **PERFORATOR.** *n. f.* [from *perforate*.] The instrument of boring.—The patient placed in a convenient chair, dipping the trocar in oil, stab it suddenly through the teguments, and withdrawing the *perforator*, leave the waters to empty by the canina. *Sharp's Surgery*.

PERFORATUS MANUS. See **ANATOMY**, § 213, 12.

* **PERFORCE.** *adv.* [*per* and *force*.] By violence; violently.—

Guyon to him leaping, staid

His hand, that trembled as one terrify'd;

And though himself were at the sight dismay'd, Yet him *perforce* restrain'd.

Spenser.

Jealous Oberon would have the child,

But the *perforce* withholds the loved boy.

Shak.

Pale with death at hand, *perforce* she breaks Into the inmost rooms.

Peacbam on Poetry.

(1.) * **TO PERFORM.** *v. a.* [*performare*, Italian.] To execute; to do; to discharge; to achieve an undertaking; to accomplish.—All three set among the foremost ranks of fame, for great minds to attempt, and great force to *perform* what they did attempt. *Sidney*.—

Hast thou, spirit,

Perform'd to point the tempest as I bade thee!

Shak.

What cannot you and I *perform* upon Th' unguarded Duncan.

Shak. Macbeth.

—God that *performeth* all things for me. *Psalms* lviii. 2.—Let all things be *performed* after the law of God. 1 *Esdra*s, viii. 21.—

Perform his fun'rals with paternal care.

Dryden.

You *perform* her office in the sphere, Born of her blood.

Dryden.

—He effectually *performed* his part, with great integrity, learning, and acuteness.

Waterland.

(2.) * **TO PERFORM.** *v. n.* To succeed in an attempt.—When a poet has *performed* admirably in several illustrious places, we sometimes admire his very errors. *Watts*.

* **PERFORMABLE.** *adj.* [from *perform*.] Practicable; such as may be done.—Men forget the relations of history, affirming that elephants have no joints, whereas their actions are not *performable* without them. *Brown's Vulg. Err.*

* **PERFORMANCE.** *n. f.* [from *perform*.] 1. Completion of something designed; execution of something promised.—

His promises were, as he then was, mighty;

But his *performance*, as he now is, nothing.

Shak.

—Promising is the very air o' th' time; it opens the eyes of expectation: *performance* is ever the duller for his act. *Shak. Timon of Athens*.—Perform the doing of it; that as there was a readiness to will, so there may be a *performance*. 2 *Cor.* viii. 11.—The only means to make him successful in the *performance* of these great works, was to be above contempt. *South*.—They must all act for the same ends, as dutiful servants of God, in the right and pious *performance* of their several callings. *Law*. 2. Competition; work.—In your *performances* 'tis scarcely possible for me to be deceived.

Dryden.

Dryden.—Few of our comic performances give good examples. *Clarif.* 3. Action; something done.—In this slumbry agitation, besides her walking and other actual performances, what have you heard her say? *Shak.*

* **PERFORMER.** *n. f.* [from *perform*.] 1. One that performs any thing.—The merit of service is seldom attributed to the true and exact performer. *Shak.* 2. It is generally applied to one that makes a public exhibition of his skill.

* **TO PERFRICATE.** *v. n.* [*perfrico*, Lat.] To rub over. *Diß.*

* **PERFUMATORY.** *adj.* [from *perfume*.] That which perfumes.

(1.) * **PERFUME.** *n. f.* [*parfume*, Fr.] 1. Strong odour of sweetness used to give scents to other things.—Pomanders and knots of powder for drying rheums are not so strong as perfumes; you may have them continually in your hand, whereas perfumes you can but take at times. *Bacon*.—Perfumes, though gross bodies that may be sensibly wasted, yet fill the air, so that we can put our nose in no part of the room where a perfume is burned, but we smell it. *Digby.* 2. Sweet odour; fragrance.—

Trodden with weeds send out a rich perfume.

Addison.

No rich perfumes refresh the fruitful field.

Pope.

Every bramble sheds perfume.

Gay.

(2.) **PERFUME**, denotes either the volatile effluvia from any body affecting the organ of smelling, or the substance emitting those effluvia; in which last sense the word is most commonly used. The generality of perfumes are made up of musk, ambergris, civet, rose and cedar woods, orange flowers, jessamines, jonquills, tuberöses, and other odoriferous flowers: Those drugs commonly called aromatics, such as storax, frankincense, benzoin, cloves, mace, &c. enter the composition of a perfume; some are also composed of aromatic herbs, or leaves, as lavender, marjoram, sage, thyme, hyssop, &c.: The use of perfumes was frequent among the Hebrews, and among the orientals in general; before it was known to the Greeks and Romans. They came to be very common among the Greeks and Romans, especially those composed of musk, ambergris, and civet. The *nardus* and *malobathrum* were held in much estimation, and were imported from Syria. The *unguentum nardinum* was variously prepared, and contained many ingredients. *Malobathrum* was an Indian plant. Perfumes were also used at sacrifices to regale the gods; at feasts, to increase the pleasures of sensation; at funerals, to overpower cadaverous smells, and please the manes of the dead; and in the theatres, to prevent the offensive effluvia proceeding from a crowd from being perceived.

* **TO PERFUME.** *v. a.* [from the noun.] To scent; to impregnate with sweet scent.—

Let me have them very well perfum'd;

For he is sweeter than perfume itself

To whom they go. *Shak. Taming of the Shrew.*

Why, rather, sleep, lest thou in smoky cribs,

And buist with buzzing night-flies to thy slumber,

Than in the perfum'd chambers of the great?

Shak.

Then will I raise aloft the milk-white rose,

With whose sweet smell the air shall be perfum'd.

Shak.

—The distilled water of wild poppy, mingled at half with rose water, take with some mixture of a few cloves in a perfuming pan. *Bacon's Nat. Hist.*

—Smells adhere to hard bodies; as in perfuming of gloves, which sheweth them corporeal. *Bacon's Nat. Hist.*—

'Tis like perfuming an ill scent,

The smell's too strong for art.

Granville.

Carmel's flow'ry top perfumes the skies! *Pope.*

* **PERFUMER.** *n. f.* [from *perfume*.] One whose trade is to sell things made to gratify the scent.—A moss the perfumers have out of apple trees, that hath an excellent scent. *Bacon's Nat. Hist.*—

First issued from perfumers' shops

A crowd of fashionable fops.

Swift.

* **PERFUNCTORILY.** *adv.* [*perfunctorie*, Lat.]

Carelessly; negligently; in such a manner as to satisfy external form.—His majesty cast his eye perfunctorily upon it. *Clarendon*.—Lay seriously to heart the clearness and evidence of these proofs, and not perfunctorily pass over all the passages of the gospel. *Lucas*.—The two first of these have been handled by Aristotle very perfunctorily; of the fourth he has said nothing at all. *Baker on Learning.*

* **PERFUNCTORY.** *adj.* [*perfunctorius*, Lat.] Slight; careless; negligent.—A transient and perfunctory examination of things leads men into considerable mistakes. *Woodward.*

* **TO PERFUSE.** *v. a.* [*perfusus*, Lat.] To tincture; to overspread.—These dregs immediately perfuse the blood with melancholy, and cause obstructions. *Harvey on Consump.*

PERG, two towns of Austria: 1. six miles S. of Aigen: 2. twelve miles E. of Steyregg.

PERGA, a town of European Turkey in Albania, opposite Corfu. Lon. 20. 19. E. Lat. 39. 40. N.

PERGAMA, the citadel of Troy; which because of its extraordinary height, gave name to all high buildings, (*Servius Virg.*) Others say the walls of Troy were called Pergama.

PERGAMAR, a town of Turkey, in Romania; 60 miles SW. of Adrianople, and 65 NW. of Gallipoli.

PERGAMEA, } names given by Virgil and
PERGAMIA } Plutarch to PERGAMUM.
PERGAMO, or } the modern name of PERGA-
PERGAMOS, } MUM, and PERGAMUS.

(1.) **PERGAMUM**, **PERGAMEA**, or **PERGAMIA**, a town of Crete, built by Agamemnon in memory of his victory. (*Plut. Virg. Velleius.*) Here was the burying-place of Lycurgus, (*Aristoxenus.*) It was situated near Cydonia (*Servius*); but Scylax helps him out, who places the Daëlynean temple of Diana, which stood near Cydonia (*Strabo*), to the north of the territory of Pergamia.

(2.) **PERGAMUM**, a town of Mysia, situated on the Caicus, which runs by it. (*Plin. Strabo.*) It was the royal residence of Eumenes, and of the kings of the race of the Attali. (*Livy.*) It had an ancient temple of Æsculapius. (*Tacitus.*) The ornament of Pergamum was the royal library, vying with

with that of Alexandria in Egypt; the kings of Pergamum and Egypt rivalling each other in this respect. (*Pliny*.) Strabo ascribes this rivalry to Eumenes. Plutarch mentions 200,000 volumes in the library at Pergamum. Here the *membrane Pergamena*, whence the name PARCHMENT, were invented for the use of books. (*Varro*, *Pliny*.) It was the country of Galen, and of Oribasius, physician to Julian. (*Eunapius*.) Here P. Scipio died, (*Cicero*.) Attalus son of Eumenes dying without issue, bequeathed his kingdom to the Roman people, who reduced it to a province. (*Strabo*.) Here was one of the nine *conventus juridici*, or assemblies of the *Asia Romana*, called *Pergamenus*, and the 9th in order, which Pliny also calls *iurisditio Pergamena*.

PERGAMUS, an ancient kingdom of Asia, formed out of the ruins of the empire of Alexander the Great. It commenced about the year 283. The first sovereign was one Philetzerus an eunuch, by birth a Paphlagonian, of a mean descent, and in his youth a menial servant to Antigonos, one of Alexander's captains. Philetzerus left the city of Pergamus to his brother, or, according to some, to his brother's son Eumenes I. who obtained possession of the greater part of the province of Asia. Eumenes was succeeded by Attalus I. nephew of Philetzerus, who, during a reign of 43 years, was engaged in many successful wars with the Gauls, Philip of Macedon, and others. He was a man of great generosity, and such an enthusiast in favour of genius, that he caused a grammarian named *Daphidas* to be thrown into the sea from the top of a high rock, because he spoke disrespectfully of Homer. Attalus was succeeded by his eldest son Eumenes II. He was exceedingly attached to the Romans, and assisted them in conquering Antiochus the Great, for which they rewarded him, by adding to his dominions all the countries on this side of Mount Taurus, which belonged to that monarch. He continued long a faithful ally of that powerful people, but having entered into a secret treaty with Perseus K. of Macedon, he excited their resentment; and although he sought to deprecate their vengeance, it would have fallen on him but for his death, which happened in the 39th year of his reign. He left one son, but as he was an infant, he nominated his brother to succeed him. Attalus II. in the beginning of his reign, was routed in a pitched battle by Prusias king of Bithynia; but the intervention of the Romans procured him complete redress. The latter part of his life he devoted to ease and luxury. He died in his 82d year, about 138 B. C. He was succeeded by Attalus III. the son of Eumenes; whose reign was one continued horrid scene of madness and tyranny. On his death a will was found, by which he left the Roman people heirs of all his goods; upon which they seized on the kingdom, and reduced it to a province of their empire by the name of *Asia Proper*. Aristonicus, a son of Eumenes by an Ephesian courtesan, endeavoured to wrest it from them, but although he gained several battles he could not attain his object, but died in prison. The country remained subject to the Romans while their empire lasted, but is now in the hands of the Turks. The city is half ruined, and is still

known by the name of *Pergamo*. It is inhabited by about 3000 Turks, and a few families of poor Christians. Lon. 27. 27. E. Lat. 30. 3. N.

PERGUNNAH, in the language of Hindoostan, means the largest subdivision of a province, whereof the revenues are brought to one particular *head Cutchery*, from whence the accounts and cash are transmitted to the general *Cutchery* of the province.

* PERHAPS. *adv.* [*per* and *hap.*] Peradventure; it may be.—

Perhaps the good old man that kiss'd his son,
Hopes yet to see him ere his glass be run.

Flatman.

—Somewhat may be invented, *perhaps* more excellent than the first design, though Virgil must be still excepted, when that *perhaps* takes place. *Dryd.*

Perhaps new graces darted from her eyes,
Perhaps soft pity charm'd his yielding soul,
Perhaps her love, *perhaps* her kingdom, charm'd him. *Smith.*

—God may *perhaps* pardon. *Law.*

PERI. See MYTHOLOGY, § 21.

PERIAGOGUE, in rhetoric, is used where many things are accumulated into one period which might have been divided into several.

PERIAGUA, a sort of large canoe made use of in the Leeward islands, S. America, and the Gulf of Mexico. It is composed of the trunks of two trees hollowed and united together; and thus differs from the canoe, which is formed of one tree.

PERIANDER, tyrant of Corinth and Corcyra, was reckoned among the seven wise men of Greece; though he might rather have been reckoned among the most wicked men, since he changed the government of his country, deprived his countrymen of their liberty, usurped the sovereignty, and committed the most shocking crimes. He committed incest with his mother, and kicked to death his wife Melissa. Yet he passed for one of the greatest politicians of his time; and Heraclides tells us, that he forbade voluptuousness; that he imposed no taxes; caused all pimps to be drowned; and established a senate. He died A. A. C. 585.

PERIANTHIUM, [from *περί*, round, and *ανθος*, the flower,] the flower cup properly so called, the most common species of calyx, placed immediately under the flower, which is contained in it as in a cup. See BOTANY, Index.

* PERIAPT. *n. f.* [*περιπτύσσω*.] Amulet; charm worn as a preservative against diseases or mischief, *Hannmer*.—

Now help, ye charming spells and *periapts*.

Shak.

(1.) * PERICARDIUM. *n. f.* [*περί* and *καρδία*; *pericarde*, Fr.] The *pericardium* is a thin membrane of a conick figure that resembles a purse, and contains the heart in its cavity: its basis is pierced in five places, for the passage of the vessels which enter and come out of the heart: the use of the *pericardium* is to contain a small quantity of clear water, which is separated by small glands in it, that the surface of the heart may not grow dry by its continual motion. *Quincy.*

(2.) PERICARDIUM. See ANATOMY, Index.

(1.) * PERICARPIUM. *n. f.* [*pericarpe*, Fr.] In botany, a pellicle or thin membrane, encompassing the fruit or grain of a plant, or that part of a fruit

fruit that envelopes the seed.—Besides this use of the pulp or *pericarpium* for the guard of the seed, it serves also for the sustenance of animals. *Ray*.

(2.) **PERICARPIMUM.** See **BOTANY**, *Index*.

PERICHORUS, in antiquity, a name given by the Greeks to those games or combats that were not consecrated to any of the gods.

PERICLES was one of the greatest men that ever flourished in Greece. He was very brave; and so eloquent, that he gained almost as great an authority under the republican government of Athens as if he had been a monarch. His fondness for women was one of his chief vices. He married the celebrated *ASPASIA*, and died the 3d year of the Peloponnesian war. See *ATTICA*, § 12, 13.

* **PERICLITATION.** *n. f.* [from *periclitor*, Lat. *periclitor*, Fr.] 1. The state of being in danger. 2. Trial; experiment.

(1.) * **PERICRANIUM.** *n. f.* [from *crani* and *cranium*; *pericranium*, Fr.] The *pericranium* is the membrane that covers the skull: it is a very thin and nervous membrane, of an exquisite sense, such as covers immediately not only the cranium, but all the bones of the body, except the teeth; for which reason it is also called the *periosteum*. *Quincy*.—Having divided the *pericranium*, I saw a suture running the whole length of the wound. *Wise*.

(2.) **PERICRANIUM.** See **ANATOMY**, *Index*.

* **PERICULOUS.** *adj.* [*periculosus*, Lat.] Dangerous; jeopards; hazardous. A word not in use.—As the moon every seventh day arriveth unto a contrary sign, so Saturn, which remaineth about as many years in one sign, and holdeth the same consideration in years as the moon in days, doth cause these *periculous* periods. *Brown*.

* **PERIERGY.** *n. f.* [*periergi* and *periergi*]. Needless caution in an operation; unnecessary diligence.

* **PERIGEE.** *n. f.* [*perigeum* and *perigeum*; *perigee*, Fr.]

* **PERIGEUM.** Is a point in the heavens, wherein a planet is said to be in its nearest distance possible from the earth. *Harris*.—By the proportion of its motion, it was at the creation at the beginning of Aries, and the *perigeum* or nearest point in Libra. *Brown's Vulgar Errors*.

PERIGUEUX, or **PERIGUEUX**, an ancient town of France, capital of the department of Dordogne, as it formerly was of the ci-devant province of Perigord, seated on the Ille; remarkable for the ruins of the temple of Venus, and an amphitheatre, and famous for partridge pies. It contains about 6000 citizens; and is 60 miles SW. of Limoges. Lon. o. 48. E. Lat. 45. 11. N.

(1.) **PERIGORD**, a province of France, which made part of Guienne. It was bounded N. by Angoumois and Marche, E. by Querci and Limosin, S. by Agemois and Bazadois, and W. by Bourdeleis, Angoumois, and Saintonge. It was about 83 miles long, and 60 broad. It abounds in iron mines, and the air is pure and healthy. **PERIGUEUX** was the capital.

(2.) **PERIGORD STONE**, an ore of manganese, of a dark grey colour, like the basalt or trapp. It may be scraped with a knife, but is extremely difficult to be broken. It is found of no regular figure, is very compact, heavy, and as black as charcoal. Its appearance is glittering and striated, like the ore of antimony; its particles being disposed in the form of needles, crossing one another

without any agglutination, inasmuch that some are loose as iron filings when stuck to a loadstone; resembling the scoria from a blacksmith's furnace. By calcination it becomes harder, and of a reddish brown colour, but is not magnetic. It has a considerable specific gravity, does not melt *per se*, but with borax runs into an amethyst-coloured glass. It is scarcely affected by nitrous acid without the addition of fugar. It seems also to contain some argil and iron. It is met with in the ci-devant provinces of Gascony and Dauphiny in France, and in some parts of England. It is employed by the French potters and enamellers in the glassy varnish of their earthen wares. See **MINERALOGY**, Part II. Chap. VII. Order XVI. Gen. I. Sp. 2.

(1.) **PERIGRAPHE**, a word used to express a careless or inaccurate delineation of any thing.

(2.) **PERIGRAPHE**, in anatomy, is used by Vesalius to express the white lines or impressions that appear on the musculus rectus of the abdomen.

PERIGUEUX. See **PERIGUEUX**.

(1.) * **PERIHELUM.** *n. f.* [*perihelion* and *perihelion*; *perihelion*, Fr.] Is that point of a planet's orbit, wherein it is nearest the sun. *Harris*.—Sir Isaac Newton has made it probable, that the comet which appeared in 1680, by approaching to the sun in its *perihelium*, acquired such a degree of heat, as to be 50,000 years a-cooling. *Cheyne's Phil. Prim.*

(2.) **PERIHELUM.** See **ASTRONOMY**, *Index*.

* **PERIL.** *n. f.* [*peril*, Fr. *perikel*, Dutch; *periculum*, Lat.] 1. Danger; hazard; jeopardy.—Doubt not to tell of your *perils*. *Sidney*.—

How many *perils* do unfold

The righteous man, to make him daily fall?

Spenser.

In the act what *perils* shall we find? *Daniel*.

The love and pious duty which you pay

Have pass'd the *perils* of so hard a way. *Dryd.*

—Strong, healthy, and young people are more in

peril by pettifolent fevers than the weak and old.

Arbutnot. 2. Denunciation; danger denounced.

I told her,

On your displeasure's *peril*,

She should not visit you. *Shak.*

* **PERILOUS.** *adj.* [*perilous*, Fr. from *peril*.]

1. Dangerous; hazardous; full of danger.—Alterations in the service of God are *perilous* in commonweals. *Hooker*.—

Infamous hills and sandy *perilous* wilds. *Milt.*

Perilous the assay, unheard the toil,

T' elude the preference of a God by guile. *Pope*.

2. It is used by way of emphasis, or ludicrous exaggeration of any thing bad.—

Thus was th' accomplish'd squire endu'd

With gifts and knowledge *per'lous* shrewd. *Hudibras*.

3. Smart; witty. In this sense it is, I think, only applied to children, and probably obtained its signification from the notion, that children eminent for wit do not live: a witty boy was therefore a *perilous* boy, or a boy in danger. It is vulgarly *parlous*.—

'Tis a *per'lous* boy,

Bold, quick, ingenious, forward, capable. *Shak.*

* **PERILOUSLY.** *adv.* [from *perilous*.] Dangerously.

* **PERILOUSNESS.** *n. f.* [from *perilous*.] Dangerousness.

PERIM

PERIM, an island in the Red Sea, situated between the two points which include the Straits of Babelmandel. It is about 5 miles long and 2 broad. The channels on each side are dangerous and shallow. The harbour is good.

* **PERIMETER**, *n. f.* [*περιμετρος*, *perimetre*, Fr.] The compass or sum of all the sides which bound any figure, of what kind soever, whether rectilinear or mixed.—By compressing the glasses still more, the diameter of this ring would increase, and the breadth of its orbit or *perimeter* decrease, until another new colour emerged in the centre of the last. *Newton's Opticks.*

PERIN, a province of Russia.

PERINEUM, or **PERINEUM**, in anatomy, the space between the anus and the parts of generation, divided into two equal lateral divisions by a very distinct line, which is longer in males than females.

PERINSKIOLD, John, a learned Swedish writer, born at Stregnesia in Sudermania, in 1654. He was made professor at Upsal, secretary antiquary of the king of Sweden, and counsellor of the chancery of antiquities. He died in 1720. His principal works are, 1. A History of the Kings of Norway. 2. A History of the Kings of the North. 3. An edition of John Meffenius on the Kings of Sweden, Norway, and Denmark, in 14 vols fol. &c.

(1.) * **PERIOD**, *n. f.* [*periode*, Fr. *περιος*, &c.] 1. A circuit. 2. Time in which any thing is performed, so as to begin again in the same manner.—Tell these, that the sun is fixed in the centre, that the earth with all the planets roll round the sun in their several *periods*. *Watts.* 3. A stated number of years; a round of time, at the end of which the things comprised within the calculation shall return to the state in which they were at the beginning.—A cycle or *period* is an account of years that has a beginning and end, and begins again as often as it ends. *Holder.*—We style a lesser space a cycle, and a greater by the name of *period*. *Holder on Time.* 4. The end or conclusion.—

If my death might make this island happy,
And prove the *period* of their tyranny. *Shak.*
—Whatever concerns this sublunary world, in the whole extent of its duration, from the chaos to the last *period*, shall be brought to light. *Burnet.*

What anxious moments pass between
The birth of plots and their last fatal *periods*.
Addison.

5. The state at which any thing terminates.—
Beauty's empires, like to greater states,
Have certain *periods* set, and hidden fates. *Suckl.*
—Light-conserving stones must be set in the sun before they retain light, and the light will appear greater or lesser, until they come to their utmost *period*. *Digby.* 6. Length of duration.—Some experiment would be made how by art to make plants more lasting than their ordinary *period*. *Bacon.* 7. A complete sentence from one full stop to another.—*Periods* are beautiful, when they are not too long. *Ben Jonson.*

Not a *period*

Shall be unfaid for me. *Milton.*
—A fallacy cunningly wrapt up in a smooth *period*. *Locke.*—The first words of every *period* in every page may be written in distinct colours. *Watts.* 8. A course of events, or series of things memorably terminated; as, the *periods* of an empire.—

From the tongue

Th' unfinished *period* falls.

Thomson.

(2.) **PERIOD**, in astronomy, the time taken up by a star or planet in making a revolution round the sun; or the duration of its course till it return to the same part of its orbit. See **PLANET**. The different periods and mean distances of the several planets are as follow:

	Days	h.	'	"	Mean Dist.
Saturn	10579	6	36	26	953800
Jupiter	4332	12	20	35	520110
Mars	686	23	27	30	152309
Earth	365	6	9	30	100000
Venus	224	16	49	24	72333
Mercury	87	23	15	53	36710

The squares of the periodical times of the primary planets, are to each other as the cubes of their distances from the sun; and likewise, the squares of the periodical times of the secondaries of any planet are to each other as the cubes of their distances from that primary. This harmony among the planets is one of the greatest confirmations of the Copernican hypothesis. See **ASTRONOMY**, § 270, 559.

(3.) **PERIOD**, in chronology, denotes a revolution of a certain number of years, or a series of years, whereby, in different nations, and on different occasions, time is measured: such are the following:

i. **PERIOD, CALIPPIC**, a system of seventy-six years. See **ASTRONOMY**, § 31; and **CALIPPIC**.

ii. **PERIOD, DIONYSIAN**, or **VICTORIAN PERIOD**, a system of 532 lunar-solar and Julian years; which being elapsed, the characters of the moon fall again upon the same day and feria, and revolve in the same order, according to the opinion of the ancients. This period is otherwise called the *great paschal cycle*, because the Christian church first used it to find the true time of the pascha or Easter. The sum of these years arise by multiplying together the cycles of the sun and moon.

iii. **PERIOD, HIPPARCHUS's**, is a series of 304 solar years, returning in a constant round, and restoring the new and full moons to the same day of the solar year, according to the sentiment of Hipparchus. This period arises by multiplying the Calippic period by four. Hipparchus assumed the quantity of the solar year to be 365 days 5 h. 55' 12"; and hence concluded, that in 104 years Calippus's period would err a whole day. He therefore multiplied the period by four, and from the product cast away an entire day. But even this does not restore the new and full moons to the same day throughout the whole period; but they are sometimes anticipated 1 day 8 hours 23' 29" 20".

iv. **PERIOD, JULIAN**. See **JULIAN**, § 5.

(4.) **PERIOD**, in grammar, denotes a small compass of discourse, containing a perfect sentence, and distinguished at the end by a point, or full stop, thus (.); and in members or divisions marked by commas, colons (:), &c. Rhetoricians consider *period*, which treats of the structure of sentences, as one of the four parts of composition. The periods allowed in oratory are three: A period of two members, called by the Greeks *dicoloi*, and by the Latins *bimembri*; a period of three members, *tricoloi*, *trimembri*; and a period of four, *quadrimembri*, *tetracolor*. See **PUNCTUATION**.

(5.) **PERIOD**.

(5.) **PERIOD**, in numbers, is a distinction made by a point or comma, after every sixth place, or figure; and is used in numeration, for the reader distinguishing and naming the several figures or places. See **NUMERATION**, under **ARITHMETIC**, *Index*.

(6.) **PERIOD**, in medicine, is applied to certain diseases which have intervals and returns, to denote an entire course or circle of such disease; or its progress from any state through all the rest till it return to the same again. Galen describes period as a time composed of an intention and remission; whence it is usually divided into two parts, the paroxysm, or exacerbation, and remission. In intermitting fevers, the periods are usually stated and regular; in other diseases, as the epilepsy, gout, &c. they are vague or irregular.

* **PERIOD**. *v. a.* [from the noun.] To put an end to. A bad word.—

Your letter he desires

To those have shut him up, which failing to him,
Periods his comfort. *Shak. Timon.*

* **PERIODICAL**. } *adj.* [*periodique*, Fr. from

* **PERIODICK**. } *period.* 1. Circular; making a circuit; making a revolution.—Was the earth's *periodick* motion always in the same plane with that of the diurnal, we should miss of those kindly increases of day and night. *Derham*.—Four moons perpetually roll round the planet Jupiter, and are carried along with him in his *periodical* circuit round the sun. *Watts on the Mind*. 2. Happening by revolution at some stated time.—Remarkable and *periodical* conjunctions. *Bentley*. 3. Regular; performing some action at stated times. The confusion of mountains and hollows furnished me with a probable reason for those *periodical* fountains in Switzerland, which flow only at such particular hours of the day. *Addison*. 4. Relating to periods or revolutions.—Plato measured the mutation of states by a *periodical* fatality of number. *Brown*.

* **PERIODICALLY**. *adv.* [from *periodical*.] At stated periods.—The three tides ought to be understood of the space of the night and day, then there will be a regular flux and reflux thrice in that time every eight hours *periodically*. *Broome*.

PERIOECI, *περιοικοι*, in geography, such inhabitants of the earth as have the same latitudes, but opposite longitudes, or live under the same parallel and the same meridian, but in different semicircles of that meridian, or in opposite points of the parallel. These have the same common seasons throughout the year, and the same phenomena of the heavenly bodies; but when it is noon-day with the one, it is midnight with the other, there being twelve hours in an east and west direction. These are found on the globe by the hour index, or by turning the globe half round, that is, 180 degrees either way.

(1.) * **PERIOSTEUM**. *n. f.* [*περι and οστος; perioste, Fr.*] All the bones are covered with a very sensible membrane, called the *periosteum*. *Cheyne's Philosophical Principles*.

(2.) **PERIOSTEUM**. See **ANATOMY**, *Index*.

PERIPATETICS, philosophers, followers of Aristotle, and maintainers of the peripatetic philosophy; called also *Aristotelians*. They were called *Peripatetics*, from *περιπατειν*, I walk; *be-*
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cause they disputed walking in the Lyceum. (See **ARISTOTLE**, § 3; **METAPHYSICS**; **PLASTIC NATURE**, &c.) A reformed system of the Peripatetic philosophy was first introduced into the schools in the university of Paris, from whence it soon spread throughout Europe: and has subsisted in some universities even to this day, under the name of *school philosophy*. The foundation thereof is Aristotle's doctrine, often misunderstood, but oftener misapplied: whence the retainers thereto may be denominated *Reformed Peripatetics*. Out of these have sprung, at various times, several branches; the chief are, the **THOMISTS**, **SCOTISTS**, and **NOMINALISTS**. See these articles. The Peripatetic system, after having prevailed with great and extensive dominion for many centuries, began rapidly to decline towards the close of the 17th, when the disciples of Ramus attacked it on the one hand, and it had still more formidable adversaries to encounter in Descartes, Gassendi, and Newton. See **PHILOSOPHY**.

PERIPATON, in antiquity, the name of that walk in the Lyceum where Aristotle taught, and whence the name of Peripatetics given to his followers.

PERIPETIA, in the drama, that part of a tragedy wherein the action is turned, the plot unravelled, and the whole concludes. See **CATASTROPHE**, § 2.

(1.) * **PERIPHERY**. *n. f.* [*περι and περι; peripherie, Fr.*] Circumference.—Neither is this sole vital faculty sufficient to exterminate noxious humours to the *periphery* or outward parts. *Harvey*.

(2.) **PERIPHERY**. See **GEOMETRY**.

* To **PERIPHRASE**. *v. a.* [*periphrasis, Fr.*] To express one word by many; to express by circumlocution.

(1.) * **PERIPHRASTIC**. *n. f.* [*περιφραστικ; periphrasie, Fr.*] Circumlocution; use of many words to express the sense of one: as, for death, we may say, the loss of life.—

She contains all blifs,

And makes the world but her *periphrasis*.

Claveland.

—They make the gates of Thebes and the mouths of this river a constant *periphrasis* for this number seven. *Brown*.—They shew their learning uselessly, and make a long *periphrasis* on every word of the book they explain. *Watts*.—The *periphrases* and circumlocutions by which Homer expresses the single act of dying, have supplied succeeding poets with all their manners of phrasing it. *Pope*.

(2.) **PERIPHRASTIC**. See **ORATORY**.

* **PERIPHRASTICAL**. *adj.* [from *periphrasis*.] Circumlocutory; expressing the sense of one word in many.

PERIPLOCA, Virginian silk, in botany: A genus of the digynia order, belonging to the petandria class of plants; and in the natural method ranking under the 30th order, *Cortorta*. The nectarium surrounds the genitals, and sends out five filaments. There are five species, four of which are natives of warm climates, and can only be raised there. The fifth, however, is sufficiently hardy for this climate. The *periploca* is a fine climbing plant, that will wind itself with its ligneous branches about whatever tree, hedge, pale, or pole is near it; and will arise, by the assistance

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gance of such support, to the height of about 30 feet; and where no tree or support is at hand to wind about, it will knit or entangle itself together in a most complicated manner. The stalks of the older branches, which are most woody, are covered with a dark brown bark, whilst the younger shoots are more mottled with the different colours of brown and grey, and the ends of the youngest shoots are often of a light green. The stalks are round, and the bark is smooth. The leaves are the greatest ornament to this plant; for they are tolerably large, and of a good shining green colour on their upper surface, and cause a variety by exhibiting their under surface of an hoary cast. Their figure is oblong, or rather more inclined to the shape of a spear, as their ends are pointed, and they stand opposite by pairs on short footstalks. Their flowers have a star-like appearance; for though they are composed of one petal only, yet the rim is divided into segments, which expand in such a manner as to form that figure. Their inside is hairy, as is also the nectarium which surrounds the petal. Four or five of the flowers grow together, forming a kind of umbel. They are of a chocolate colour, are small, and are in blow in July and August, and sometimes in September. In the country where this genus grows naturally, they are succeeded by a long taper pod, with compressed seeds, having down to their tops. The propagation of this climber is very easy; for if the cuttings are planted in a light moist soil, in the autumn or in the spring, they will readily strike root. Three joints at least should be allowed to each cutting: they should be the bottom of the preceding summer's shoot; and two of the joints should be planted deep in the soil. Another, and a never-failing method, is by layers; for if they are laid down in the ground, or a little soil only loosely thrown over the young preceding summer's shoots, they will strike root at the joints, and be good plants for removing the winter following.

(1.) * PERIPNEUMONIA. } *n. f.* [*πνιγ* and
(1.) * PERIPNEUMONY. } *πνευμον*; *peripneumonie*, Fr.] An inflammation of the lungs.—Gross reliques of *peripneumonia* or inflammation of the lungs. *Harvey*.—A *peripneumony* is the last fatal symptom of every dillene. *Arbuthnot*.

(2.) PERIPNEUMONY is attended with an acute fever, and a difficulty of breathing. See MEDICINE, Index.

PERIRRHANTERIUM, a vessel of stone or brass, which was filled with holy water, and with which all those were sprinkled who were admitted by the ancients to their sacrifices. Beyond this vessel no profane person was allowed to pass. It was used both by Greeks and Romans, and has been evidently borrowed by the Church of Rome. The Hebrews also had a vessel for purification.

PERISCH, in geography, the inhabitants of either frigid zone, between the polar circles and the poles, where the sun, when in the summer signs, moves only round about them, without setting; and consequently their shadows in the same day turn to all the points of the horizon.

(1.) * To PERISH. *v. n.* [*perir*, Fr. *perco*, Lat.] 1. To die; to be destroyed; to be lost; to come to nothing. It seems to have for or with before

a cause, and by before an instrument. *Locke* has by before the cause.—

I burn, I pine, I perish,
—If I achieve not this young modest girl. *Shak.*
—If I have seen any *perish* for want of clothing. *Job* xxxi. 29.—He keepeth his life from *perishing* by the sword. *Job* xxxiii. 18.—They *perish* from off the good land. *Deut.* xi. 18.—I *perish* with hunger. *Luke* xv. 17.—The sick are laid on the earth to *perish*. *Locke*.—Thoughts of a soul that *perish* in thinking. *Locke*.—Exposing their children, and leaving them in the fields to *perish* by want, has been the practice. *Locke*.—

Some Athens *perishes*, or Tully bleeds. *Pope*.
—The subjects *perished* through their own fault. *Pope*. 2. To be in a perpetual state of decay.—Duration, and time which is a part of it, is the idea we have of *perishing* distance, of which no two parts exist together, but follow in succession. *Locke*. 3. To be lost eternally.—These shall utterly *perish*. 2 *Peter* ii. 12.—O suffer me not to *perish* in my sins. *Morison*.

(2.) * To PERISH. *v. a.* To destroy; to decay. Not in use.—

Because thy flinty heart more hard than rocks,
Might in thy palace *perish* Margaret! *Shak.*
Rise, prepar'd in black, to mourn thy *perish'd* lord. *Dryden*.
—This closeness did a little *perish* his understandings. *Caillier*.—

You weep not for a *perish'd* lord alone. *Pope*.
* PERISHABLE. *adj.* (from *perish*.) Liable to *perish*; subject to decay; of short duration.—Bodily substances and *perishable* natures. *Raleigh*.—Authority not *perishable* by time. *Addison*.—It is princes greatest present felicity to reign in their subjects hearts; but these are too *perishable* to preserve their memories. *Swift*.—The frail and *perishable* composition of flesh and blood. *Rogers*.—Thrice has he seen the *perishable* kind

Of men decay. *Pope*.
* PERISHABLENESS. *n. f.* (from *perishable*.) Liableness to be destroyed; liableness to decay.—Suppose an island having nothing, because of its commonness and *perishableness*, fit to supply the place of money. *Locke*.

PERISPA, a town of Persia, in the province of Irak, 18 miles S. of Amadan.

* PERISTALTICK. *adj.* [*περιστάλιν*; *peristaltique*, Fr.] *Peristaltick* motion is that vermicular motion of the guts, which is made by the contraction of the spiral fibres, whereby the excrements are pressed downwards and voided. *Quincy*.

(1.) * PERISTERION. *n. f.* The herb vervain.
(2.) PERISTERION. See VERBENA.

* PERISTYLE. *n. f.* [*περίστυλο*, Fr.] A circular range of pillars.—The Villa Gordiana had a *peristyle* of two hundred pillars. *Arbuthnot*.

* PERISYSTOLE. *n. f.* [*περίσυστολη*] The pause or interval betwixt the two motions of the heart or pulse; namely, that of the systole or contraction of the heart, and that of the diastole or dilation. *Di3*.

PERITAS, a cluster of islands of S. America, in the S. Sea, 9 miles W. of Cumana bay.

PERITO, a town of Naples, in Abruzzo Ultra, 16 miles WSW. of Celano.

(1.) * PERITONEUM.

(1.) * **PERITONEUM**. *n. f.* [*περιτόνιον*; *peritoneum*, Fr.] This lies immediately under the muscles of the lower belly, and is a thin and soft membrane, which encloses all the bowels contained in the lower belly, covering all the inside of its cavity. *Diſt.*—Wounds which reach no farther than to the *peritoneum*. *Wiſeman*.

(2.) **PERITONEUM**. See **ANATOMY**, *Index*.

PERITIUM, a town of Egypt, on the W. bank of the Nile, reckoned one of the keys of the country. Mark Antony was defeated near it, by Corn. Gallus, a lieutenant of Augustus.

PERITROCHUM, in mechanics, denotes a wheel, or circle, concentric with the base of a cylinder, and moveable together with it about its axis. See **MECHANICS**.

PERIVALE, a small village in Middleſex, formerly Little Greenford, or Gauſford, N. of Great Ealing; but properly a rich vale of corn land extending from Heton to Harrow on the Hill and Pinner.

* **PERJURE**. *n. f.* [*perjurus*, Lat.] A perjured or ſworn perſon. A word not in uſe.—

Hide thee,

Thou *perjure*, thou ſimular of virtue. *Shak.*

* To **PERJURE**. *v. a.* [*perjuro*, Latin. To ſwear; to taint with perjury. It is uſed with the reciprocal pronoun: as, *be perjured himſelf*.]—

The right hand

Is *perjur'd* to the boſom. *Shak.*

—The law is made for *perjur'd* perſons. 1 *Tim.* i. 10.

* **PERJURER**. *n. f.* [from *perjure*.] One that ſwears falſely.—Works vengeance on the *perjurers*. *Spencer*.

(1.) * **PERJURY**. *n. f.* [*perjuria*, Lat.] Falſe oath.—

What ſcourge for *perjury*

Can this dark monarchy afford falſe Clarence? *Shak.*

(2.) **PERJURY**, in law, is defined by Sir Edward Coke to be a crime committed when a lawful oath is adminiſtered, in ſome judicial proceeding, to a perſon who ſwears wilfully, abſolutely, and falſely, in a matter material to the iſſue or point in queſtion. In ancient times it was in ſome places puniſhed with death; in others, it made the falſe ſwearer liable to the puniſhment due to the crime he had charged the innocent perſon with; in others a pecuniary mulct was impoſed. See **OATH**.

(3.) **PERJURY**, in Scots law. See **LAW**, Part III. Chap. III. *ſc.* IV. § 34, 35.

* **PERIWIG**. *n. f.* [*perruque*, Fr.] Aditiitious hair; hair not natural, worn by way of ornament or concealment of baldneſs.—

I'll get me ſuch a colour'd *periwig*. *Shak.*

—It offends me to hear a robuſtious *periwig*-pated fellow. *Shak.*

The fun

Serves but for ladies *periwigs* and ties. *Donne*.

I'll not thy *periwig* be call'd. *Clarendon*.

—His highneſs and the marquis bought each a *periwig*. *Wotton*.—They uſed falſe hair or *periwigs*. *Arbutnot*.—A *periwig* of twiſted ſnakes. *Swift*.

* To **PERIWIG**. *v. a.* [from the noun.] To dreſs in falſe hair.—

Now when the winter's keener breath began

To *periwig* with ſnow the bald-pate woods.

Sylveſter.

Diſcord *periwig'd* with ſnakes,

See the dreadful ſtrides ſhe takes. *Swift*.

* **PERIWINKLE**. *n. f.* 1. A ſmall ſhell fiſh; a king of fiſh ſnail.—Upon her head a coronet of *periwinkle* and eſcalop ſhells. *Peaſham*. 2. [*Clematis*.] A plant.—There are in uſe, for the prevention of the cramp, bands of green *periwinkle* tied about the calf of the leg. *Bacon*.—A common ſimple with us is *periwinkle*. *Wiſeman*.

PERIZONIUS, James, a learned and laborious writer, born at Dam in 1651. He became profeſſor of hiſtory and eloquence at the univerſity of Franeker, when, by his merit and learning he made that univerſity flouriſh. However, in 1693, he went to Leyden, where he was made profeſſor of hiſtory, eloquence, and Greek; in which employment he continued till his death, in 1715. He wrote many learned and curious works, particularly *Origines Babylonica et Egyptiaca*, 2 vols. 8vo, &c. But his work, moſt generally known, is the notes upon *Sancta Minerva*.

PERIZZITES, ancient inhabitants of Paleſtine, mingled with the Canaanites. They did not inhabit any certain portion of the land of Canaan; there were ſome of them on both ſides the river Jordan, in the mountains, and the plains.

* **PERK**. *adj.* Pert; briſk; airy. **Obſolete**.—

They wag their wriggle tails,

Perk as a peacock, but nought avails. *Spencer*.

(1.) * To **PERK**. *v. n.* [from *perch*, *Skinner*.] To hold up the head with an affected briſkneſs.—

If, after all, you think it a diſgrace,

That Edward's miſs thus *perks* it in your face.

Pope.

(2.) * To **PERK**. *v. a.* To dreſs; to prank.—

'Tis better to be lowly born,

Than to be *perk'd* up in a glit'ring grief. *Shak.*

PERKIN. See **CIDERKIN** and **CYDERKIN**.

(1.) **PERKINEAN**, *adj.* of or belonging to **PERKINISM**.

(2.) **PERKINEAN SOCIETY**, a ſociety lately inſtituted at N^o 3. Frith Street, Soho, London; for the relief of the afflicted poor, by the uſe of the metallic traectors. The liſt of ſubſcribers is numerous and reſpectable. If **PERKINISM** be an *impoſition*, or *deception*, as ſome allege, an incredible number of perſons of all ranks are deceived.

PERKINISM, in medicine, is a method of curing head-achs, megrams, rheumatifms, quiniſes, gouts, lombagos, cramps, conuſions, ſprains, tumors, burns, ſcabies, eryſipelas, paſſies, and various other diſeaſes and pains in all parts of the body; by diſſolving METALLIC TRAECTORS over the parts affected; invented by Dr Perkins of N. America. Theſe traectors are made of ſilver, braſs, copper, iron, lead, or zinc; and even of ivory and ebony; and are ſuppoſed to act as mechanical ſtimuli, or as galvanic conductors of electricity. Experiments have been made with ſucceſs by other phyſicians and ſurgeons, particularly Dr J. C. Tode, phyſician to the king of Denmark, and profeſſors Herholdt and Raſin, of Copenhagen, who publiſhed a *treatiſe on Perkinism*, and firſt made uſe of the term. Many other traects have ſince been publiſhed in London, exhibiting a great number of caſes, and about 2000 cures, ſeemingly all well

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attesteſd,

attested, performed upon persons of all ages, from infancy to upwards of 70. But whether their success is to be attributed to inherent virtue, or to the imagination of the patient, is not for us to determine. It would appear, however, that in many well authenticated cases of cures performed on brutes, the latter could have no influence.

PERLEBERG, a town of Upper Saxony, capital of Prignitz. It was pillaged by the Swedes in 1638. It lies 62 miles NW. of Berlin.

PERLETHORP, a village in Edengtrow parish, Nottinghamshire.

* **PERLOUS**. *adj.* [from *perilous*.] Dangerous; full of hazard.—

A *perulous* passage. *Spenser.*
Late he far'd

In Phædra's fleet bark o'er the *perulous* shard.

(1.) **PERM**, a government of Russia, formerly a province of Kalan. It is divided into two provinces, viz. **PERM** (N° 2.) and **CATHARINENBURG**.

(2.) **PERM**, a province in the above government, seated on the banks of the Kama.

(3.) **PERM**, the capital of the above government and province, seated at the conflux of the Kama and the Zegochekha, 808 miles E. of Petersburg, and 620 E. of Moscow. Lon. 74. 0. E. of Ferro. Lat. 57. 40. N.

PERMACOIL, a town of Hindooostan, in the Carnatic, 17 miles NNW. of Pondicherry, and 45 SSE. of Arcot. It was taken by the British under Col. Coote, in 1760. See **INDIA**, § 18.

* **PERMAGY**. *n. f.* A little Turkish boot. *Diß.*

* **PERMANENCE**. *n. f.* [from *permanent*.]

* **PERMANENCY**. *n. f.* 1. Duration; consistency; continuance in the same state; lastingness.—Salt, they say, is the basis of solidity and *permanency* in compound bodies. *Boyle*.—Shall I dispute whether there be any such material being, that hath such a *permanence* or fixedness in being. *Hale*.—From the *permanency* and immutability of nature. *Burnet*. 2. Continuance in rest.—Such a punctum to our conceptions is almost equivalent to *permanency* and rest. *Bentley*.

* **PERMANENT**. *adj.* [from *permanent*, Fr. *permanens*, Lat.] 1. Durable; not decaying; unchanging.—All laws which God hath made, are necessarily forever *permanent*. *Hooker*.—That eternal duration should be at once, is utterly unconceivable, and that one *permanent* instant should be commensurate or rather equal to all successions of ages. *More*—

Eternity stands *permanent* and fixt. *Dryden*.
2. Of long continuance.—These, or such other light injuries, which leave no *permanent* effect. *Kittilewell*.

* **PERMANENTLY**. *adv.* [from *permanent*.] Durably; lastingly.—It does, like a compact or consistent body, deny to mingle *permanently* with the contiguous liquor. *Boyle*.

* **PERMANSION**. *n. f.* [from *permanes*, Lat.] Continuance.—A'though we allow that hares may exchange their sex sometimes, yet not in that vicissitude, it is presumed, from female unto male, and from male to female again, and so in a circle without a *permansion* in either. *Brown*.

* **PERMEABLE**. *adj.* [from *permeo*, Lat.] Such

as may be pass'd through.—The pores of a bladder are not easily *permeable* by air. *Boyle*.

* **PERMEANT**. *adj.* [from *permeans*, Lat.] Passing through.—It entereth not the veins, but taketh leave of the *permeant* parts at the mouth of the meseraicks. *Brown*.

* **TO PERMEATE**. *v. a.* [from *permeo*, Latin.] To pass through.—This heat evaporates and elevates the water of the abyss, pervading not only the fissures, but the very bodies of the strata, *permeating* the interstices of the sand or other matter whereof they consist. *Woodward's Nat. Hist.*

* **PERMEATION**. *n. f.* [from *permeate*.] The act of passing through.

* **PERMISCIBLE**. *adj.* [from *permisco*, Lat.] Such as may be mingled.

* **PERMISSIBLE**. *adj.* [from *permisus*, Lat.] What may be permitted.

* **PERMISSION**. *n. f.* [from *permissio*, Fr. *permissus*, Lat.] Allowance; grant of liberty.—

With thy *permission* then, and thus forewarn'd, The willinger I go. *Milton*.

—You have given me your *permission* for this address. *Dryden*.

* **PERMISSIVE**. *adj.* [from *permitto*, Latin.] 1. Granting liberty, not favour; not hindering, though not approving.—

We bid this be done.

When evil deeds have their *permissive* pass, And not the punishment. *Shak.*

Hypocrisy, the only evil that walks Invisible, except to God alone,

By his *permissive* will, through heav'n and earth. *Milton*.

2. Granted; suffered without hindrance; not authorized or favoured.—If this doth authorize usury, which before was but *permissive*. *Bacon's Essays*.—

Thus I embolden'd spoke, and freedom us'd *Permissive*, and acceptance found. *Milton*.

Clad

With what *permissive* glory since his fall Was left him, or talle glitter. *Milton*.

* **PERMISSIVELY**. *adj.* [from *permissive*.] By bare allowance; without hindrance.—As to a war for the propagation of the christian faith, I would be glad to hear spoken concerning the lawfulness, not only *permissively*, but whether it be not obligatory to Christian princes to design it. *Bacon*.

* **PERMISTION**. *n. f.* [from *permisus*, Lat.] The act of mixing.

* **PERMIT**. *n. f.* A written permission from an officer for transporting of goods from place to place, showing the duty on them to have been paid.

* **TO PERMIT**. *v. a.* [from *permitto*, Lat. *permettre*, Fr.] 1. To allow without command.—What things God doth neither command nor forbid, the same he *permitteth*, &c. *Hooker*. 2. To suffer, without authorizing or approving. 3. To allow; to suffer.—It is not *permitted* unto women to speak. 1 *Corinthians*, xiv. 34.—

Ye gliding ghosts, *permit* me to relate. *Dryden*.
—Age *permits* not that our mortal members should retain the vigour of our youth. *Dryden*.
—We should not *permit* an allowed, possible, great, and weighty good to slip out of our thoughts, &c. *Locke*.—After men have acquired as much as the laws *permit* them, &c. *Savisi*. 4. To give up; to resign.—

Nor

Nor love thy life, nor hate; but what thou
liv'st,
Live well; how long, how short, *permit* to
heav'n.
—If the course of truth be *permitted* unto itself, it
cannot escape many errors. *Brown.*

To the gods *permit* the rest. *Dryden.*
Laws, empire, all *permitted* to the sword.

Unto the gods *permit* th' event of things.
Addison's Cato.

* **PERMITTANCE.** *n. f.* [from *permit*.] Allowance; forbearance of opposition; permission. A bad word.—When this system of air comes, by divine *permittance*, &c. *Denham.*

* **PERMIXION.** *n. f.* [from *permixtus*, Lat.] The act of mingling; the state of being mingled.—They fell into the opposite extremity of one nature in Christ, the divine and human natures in Christ, in their conceits, by *permixtion* and confusion of substances, &c. *Brerewood.*

PERMSKI, or **PERMIA**, a town of the Russian empire, and capital of a province of the same name, seated on the Kama between the Dwina and the Oby. The province is bounded N. by the Samoiedes, W. by Ziranian and Ulatka, and E. by Siberia. The town lies in Lon. 55. 50. E. Lat. 70. 26. N.

PERMSKOI, one of the 41 governments of Russia, formerly a province of Kasan. It is divided into two provinces; namely, Perm, the capital of which is the same name, seated on the river Kama, where it receives the Zegocheha, in Lat. 57. 40. N. Lon. 54. 6. E. and Catherinenburg the capital of which, of the same name, is seated not far from the source of the river Isfel, in Lat. 56. 36. N. Lon. 60. 30. E.

* **PERMUTATION.** *n. f.* [*permutatio*, Fr. *permutatio*, Lat.] Exchange of one for another.—A *permutation* of number is frequent in languages. *Bentley*—Gold and silver, by their rarity, are wonderfully fitted for the use of *permutation* for all sorts of commodities. *Ray.*

* To **PERMUTE.** *v. a.* [*permuto*, Lat. *permuto*, Fr.] To exchange.

* **PERMUTER.** *n. f.* [*permutant*, Fr. from *permuto*.] An exchanger; he who permutes.
PERNABIACABA, a mountain of Brazil, near St Paul.

PERNALLA, a town of Hindooostan, in Guzerat; 38 miles S. of Surat. Lon. 72. 53. E. Lat. 20. 35. N.

PERNAMBUCO. See **OLINDA**.

(1.) **PERNE**, a town of France in the dep. of the Mouths of the Rhone.

(2.) **PERNE**, a town of France in the dep. of the Straits of Calais.

PERNEAU, a town of Russia, in Livonia, with a castle, near the mouth of a river, so named, 35 miles N. of Riga. Lon. 23. 37. E. Lat. 58. 26. N.

PERNEK, a fort of Hungary, 12 miles N. of Presburg.

(1.) **PERNES**, a town of France, in the dep. of the Straits of Calais, and ci-devant prov. of Artois, on the Clarence 17 miles NW. of Arras. Lon. 2. 31. E. Lat. 50. 29. N.

(2.) **PERNES.** See **PERNE**.

PERNIA, a town of Croatia; 16 miles SE. of Carlsbad.

* **PERNICIOUS.** *adj.* [*perniciosus*, Lat. *pernicieux*, Fr.] 1. Mischievous in the highest degree; destructive.—It would be hurtful, if not *pernicious*. *Hooker.*

I call you servile ministers,
That have with two *pernicious* daughters join'd
Your high engender'd battles, 'gainst a head
So old and white as this. *Shak. King Lear.*

Let this *pernicious* hour
Stand ay accursed in the kalendar! *Shak.*
2. [*Pernix*, Latin.] Quick. An use which I have found only in *Milton*, and which, as it produces an ambiguity, ought not to be imitated.—

Part incentive need
Provide, *pernicious* with one touch to fire. *Milt.*
* **PERNICIOUSLY.** *adv.* [from *pernicious*.] Destructively; mischievously; ruinously.—Some *perniciously*, against their own conscience, have taugt. *Afham.*

All the commons
Hate him *perniciously*. *Shak. Henry VIII.*

* **PERNICIOUSNESS.** *n. f.* [from *pernicious*.] The quality of being *pernicious*.

* **PERNICITY.** *n. f.* [from *pernix*.] Swiftmess; celerity.—Others are endued with great *pernicity*. *Ray.*

PERNIO, a kibe or chilblain, is a little ulcer, occasioned by cold in the hands, feet, heels, nose, and lips. It will come on when warm parts are too suddenly exposed to cold, or when parts from being too cool are suddenly exposed to a considerable warmth; and has always a tendency to gangrene, in which it frequently terminates. It most commonly attacks children of a sanguine habit and delicate constitution; and may be prevented or removed by such remedies as invigorate the system, and are capable of removing any tendency to gangrene in the constitution.

PERNO, a town of Nyland, in Sweden.

PERNOV, a town in the government of Riga, on a river near the Baltic.

PERNSTAIN, a town of Germany, in Austria; 12 miles NNW. of Wolfgang.

PERONÆUS, in anatomy, 3 muscles of the perone or fibula. See **ANATOMY**, § 217, N° 8, 9, 11.

PERONES, a sort of high shoes which in early times were worn even by senators; but at last were confined to ploughmen and labourers. They were very rudely formed, consisting only of hides undressed, and reaching to the middle of the leg. Virgil mentions the perones as worn by a company of rustic soldiers on one foot only.

PERONNE, a strong town of France, in the dep. of the Somme and late prov. of Picardy. It is called *La Pucelle*, i. e. *the Virgin*, because it has never been taken, though often besieged. It is very ancient. The Merovingian kings had a palace in it, and Charles the Simple was imprisoned and died in its castle. Lewis XI. was also detained in it, by the D. of Burgundy, till he was forced to sign a disadvantageous treaty. It has 17,000 citizens; and is seated on the Somme, 27 miles SW. of Cambray, and 80 E. by N. of Paris. Lon. 3. 2. E. Lat. 49. 55. N.

(1.)

(1.) * PERORATION. *n. f.* [*peroratio*, Lat.] The conclusion of an oration.—

What means this passionate discourse?

This *peroration* with such circumstances? *Shak.*

True woman to the last—my *peroration*

I come to speak in spite of suffocation. *Smart.*

(2.) PERORATION consists of two parts. 1. Recapitulation; wherein the substance of what was diffused throughout the whole speech is collected briefly and cursorily, and summed up with new force and weight. 2. The moving the passions; which is so peculiar to the *peroration*, that the masters of the art call this part *sedes affectuum*. See ORATORY.

PEROSE, a village of England, in Cornwall.

PEROTIS, in botany, a genus of the digynia order, belonging to the triandria class of plants; and in the natural method ranking under the 4th order, *Gramina*. There is no calyx: the corolla consists of a bivalvular glume; the valves are oblong, acute, somewhat unequal, and terminating in a sharp beard: it has three capillary stamens; the anther incumbent; the style capillary, and shorter than the corolla; the stigma feathery and divaricated. The corolla serves as a perianthium, including a single seed of an oblong linear shape.—Of this there is only one species; viz.

PEROTIS PLUMOSUS, a native of America.

PEROUGE, a town of France, in the dep. of Ain, a mile W. of Meximieux, and 2 NE. of Montluel.

PEROUSA, a town of France, in the dep. of the Po, and Piedmontese, 16 miles SW. of Turin.

PEROUSE, John Francis Galaup, a celebrated, but unfortunate French navigator born at Albi, in 1741. He entered early into the marine school, and served 5 years during the war. In Oct. 1764, he was made ensign, and acted in the E. Indies from 1765 to 1777. He served under D'Estaing in the following war, and in 1782, was appointed on the difficult task of destroying the British settlements at Hudson's Bay, which he accomplished, and returned in 1783. In 1785, he was sent by Lewis XVI. with two ships on a voyage of discovery, but perished with his whole crews, having never been heard of, since he left Botany Bay, in Jan. 1788. His voyage was published at London, 1798, in 3 vols. 8vo. and contains numerous important discoveries in various sciences.

* To PERPEND. *v. a.* [*perpendo*, Lat.] To weigh in the mind; to consider attentively.—

Thus it remains; and the remainder thus

Perpend. *Shak.*

Perpend, my princess, and give ear. *Shak.*

—Duly *perpend* the discoveries of men. *Brown.*

* PERPENDER. *n. f.* [*perpigne*, Fr.] A coping stone.

* PERPENDICLE. *n. f.* [*perpendicular*, Fr. *perpendicular*, Lat.] Any thing hanging down by a straight line. *Diſt.*

(2.) * PERPENDICULAR. *adj.* [*perpendiculaire*, Fr. *perpendicularis*, Latin.] 1. Crossing any other line at right angles. Of two lines, if one be perpendicular, the other is perpendicular too.—

If in a line oblique their atoms rove,

Or in a perpendicular they move. *Blackmore.*

—The angle of incidence is that angle, which

the line, described by the incident ray, contains with the perpendicular to the reflecting or refracting surface at the point of incidence. *Newton.* 2. Cutting the horizon at right angles.—Some define the perpendicular altitude of the highest mountains to be four miles. *Brown.*

(2.) * PERPENDICULAR. *n. f.* A line crossing the horizon at right angles.—Though the quantity of water thus rising and falling be nearly constant as to the whole, yet it varies in the several parts of the globe; by reason that the vapours float in the atmosphere, and are not reflored down again in a perpendicular upon the same precise tract of land. *Woodward.*

(3.) PERPENDICULAR. See GEOMETRY, Index.

* PERPENDICULARITY. *n. f.* [from *perpendicular*.] The state of being perpendicular.—The meeting of two lines is the primary essential mode or difference of an angle; the perpendicularity of these lines is the difference of a right angle. *Watts.*

* PERPENDICULARLY. *adj.* [from *perpendicular*.] 1. In such a manner as to cut another line at right angles. 2. In the direction of a straight line up and down.—

Thou hast *perpendicularly* fall'n. *Shak.*
—Irons cooled *perpendicularly*, acquire a directive faculty. *Brown.*—Shoot up an arrow *perpendicularly* it will return to your foot again. *More.*—All weights move *perpendicularly* downward. *Ray.*

* PERPENSION. *n. f.* [from *perpend*.] Consideration. Not in use.—Unto reasonable *perpensions* it hath no place in some sciences. *Brown.*

* To PERPETRATE. *v. a.* [*perpetro*, Lat. *perpetrer*, Fr.] 1. To commit; to act. Always in an ill sense.—

It's true and perpetrated in our days. *Tate.*
These they returning will to death require,
Will *perpetrate* on them the first design,
And take the forfeit of their heads for mine. *Dryden.*

Fierce Romulus, for perpetrated crimes,
A sacred refuge made. *Dryden.*

2. It is used by *Butler* in a natural sense, in compliance with his verse, but not properly.—

For whatsoe'er we *perpetrate*,
We do but row, we're steer'd by fate. *Hudib.*

* PERPETRATION. *n. f.* [from *perpetrate*.]

1. The act of committing a crime.—A desperate discontented assassinate would, after the *perpetration*, have housed a mere private revenge. *Watt.*—A woman who lends an ear to a seducer, may be infernally drawn into the *perpetration* of the most violent acts. *Clarissa.* 2. A bad action.—The strokes of divine vengeance always attend injurious *perpetrations*. *K. Charles.*

(1.) * PERPETUAL. *adj.* [*perpetuel*, Fr. *perpetuus*, Latin.] 1. Never ceasing; eternal with respect to futurity.—Under the same moral, and therefore under the same perpetual law. *Holyday.*—Mine is a love which muſt perpetual be. *Dryden.*

2. Continual; uninterrupted; perennial.—

Within those banks rivers now
Stream, and perpetual draw their humid train. *Milton.*

—By the muscular motion and perpetual flux of the liquids, a great part of them is thrown out of

of the body. *Arbutnot.* 3. Perpetual screw. A screw which acts against the teeth of a wheel, and continues its action without end.—A perpetual screw hath the motion of a wheel and the force of a screw, being both infinite. *Wilkins.*

and confound the reader. *Waterland.* 4. To make intricate; to involve; to complicate.—

Their way

Lies through the perplexed paths of this drear wood. *Milton.*

(2.) PERPETUAL MOTION. See MOTION, § 9.

(3.) PERPETUAL MOVEMENT. See MOVEMENT, N^o 4.

* PERPETUALLY. *adv.* [from *perpetual*.] Constantly; continually; incessantly.—The numbers are perpetually varied. *Dryden.*—Doth it not grow denser and denser perpetually? *Newton.*—The bible being perpetually read in churches. *Swift.*

* To PERPETUATE. *v. a.* [*perpetuer*, Fr. *perpetuo*, Lat.] 1. To make perpetual; to preserve from extinction; to eternalize.—Medals perpetuate the glories of her majesty's reign. *Addison.*—Man cannot devise any other method so likely to preserve and perpetuate the knowledge and belief of a revelation. *Forbes.* 2. To continue without cessation or intermission.—A continued perpetuated voice from heaven. *Hammond.*

* PERPETUATION. *n. f.* [from *perpetuate*.] The act of making perpetual; incessant continuance.—Perpetuation of an ancient custom. *Brown.*

* PERPETUITY. *n. f.* [*perpetuité*, Fr. *perpetuitas*, Lat.]. 1. Duration to all futurity.—God for perpetuity hath established laws. *Hooker.*

Grown so in perpetuity. *Shak. Cymbeline.*

We should, for perpetuity,

Go hence in debt. *Shak. Winter's Tale.*

—Nothing wanted to his noble and heroic intentions, but only to give perpetuity to that which was in his time so happily established. *Bacon.*—There can be no other assurance of the perpetuity of this church, but what we have from him that built it, *Pearson.* 2. Exemption from; intermission; or cessation.—A cycle or period begins again as often as it ends, and so obtains a perpetuity. *Holder.*—The gospel enjoins a constant disposition of mind to practise all christian virtues, not a perpetuity of exercise and action. *Nelson.* 3. Something of which there is no end.—A present repast for a perpetuity. *South.*—The ennobling property of the pleasure that accrues to a man from religion is, that he that has the property, may be also sure of the perpetuity. *South.*

The laws of God as well as of the land

Abhor a perpetuity should stand. *Pope.*

PERPIGNAN, a considerable town of France, in the dep. of the Eastern Pyrenees, with a strong citadel and an university. It is seated on the river Tet; over which there is a handsome bridge, partly in a plain, and partly on a hill. Lon. o. 43. E. Lat. 45. 18. N.

* PERPLEX. *adj.* [*perplex*, Fr. *perplexus*, Lat.] Intricate; difficult. *Perplexed* is the word in use.—How the soul directs the spirits is perplex in the theory. *Glauville's Scipis.*

* To PERPLEX. *v. a.* [*perplexus*, Lat.] 1. To disturb with doubtful notions; to entangle; to make anxious; to tease with suspense or ambiguity; to distract; to embarrass; to puzzle.—Being greatly perplexed in his mind, he determined to go into Persia. 1 Mac. iii. 31.—Themselves with doubts the day and night perplex. *Denb.*—He perplexes the minds of the fair sex. *Dryden.* We shall be apt to perplex the mind. *Locke.*—You perplex

We both are involv'd

In the same intricate perplex distress. *Addison.*—What was thought obscure, perplexed, will lie open. *Locke.* 3. To plague; to torment; to vex. A sense not proper, nor used.—

How might such killing eyes perplex. *Grav.*

* PERPLEXEDLY. *adv.* [from *perplexed*.] Intricately; with involution.

* PERPLEXEDNESS. *n. f.* [from *perplexed*.] 1. Embarrassment; anxiety. 2. Intricacy; involution; difficulty.—Obscurity and perplexedness have been cast upon St Paul's Epistles from without. *Locke.*

* PERPLEXITY. *n. f.* [*perplexité*, Fr.] 1. Anxiety; distraction of mind.—The fear of him ever since hath put me into such perplexity, as now you found me. *Sidney.*—Perplexity not suffering them to be idle, they think and do, as it were, in a phrensy. *Hooker.*

In pensive plight and sad perplexity. *Spenser.*

2. Entanglement; intricacy.—In the perplexity of his own thoughts. *Stillingsfleet.*

* PERPOTATION. *n. f.* [*per* and *potio*, Lat.] The act of drinking largely.

(1.) PERQUIMANS, or PERQUIMINS, a county of N. Carolina in Edenton district, bounded on the W. by Chowan county, and E. by the Pasquotank and Pasquotank county. In 1795, it contained 3562 citizens, and 1878 slaves.

(2.) PERQUIMANS, or } a river in the 'above
(3.) PERQUIMINS, } county, to which it gives name.

(1.) * PERQUISITE. *n. f.* [*perquisitus*, Latin.] Something gained by a place or office over and above the settled wages.—

Tell me, perquisites, was it fit

To make my cream a perquisite: *Widow and Cat.*—The best perquisites of a place are the advantages it gives a man of doing good. *Addison.*

To what your lawful perquisites amount.

Swift.

(2.) PERQUISITE, in law, is any thing gotten by a man's own industry, or purchased with his money; in contradistinction to what descends to him from his father or other ancestor.

* PERQUISITED. *adj.* [from *perquisite*.] Supplied with perquisites.—

If perquisited varlets frequent stand. *Savage.*

* PERQUISITION. *n. f.* [*perquisitus*, Latin.] An accurate enquiry; a thorough search. *Ainslie.*

(1.) PERRAULT, Charles, son of an advocate in parliament, was born at Paris, in 1626. Colbert chose him first clerk of the buildings, of which he was superintendent, and afterwards made him comptroller-general of the finances under him. He was one of the first members of the academy of the belles lettres and inscriptions, and was received into the French academy in 1671. His poems *La Peinture*, and *La fée de Louis le Grand*, are well known. He drew up elegies of great men of the 17th century, with portraits, and produced other esteemed works.

(2.) PERRAULT, Claude, brother of Charles, was

was born at Paris in 1613; and was bred a physician, though he never practised but among his relations, friends, and the poor. He excelled in architecture, painting, sculpture, mathematics, physics, and all those arts that relate to designing and mechanics. When the academy of sciences was established, he was one of its first members, and was chiefly depended on for mechanics and natural philosophy. His works are, A French translation of Vitruvius: *Memoires pour servir à l'Histoire naturelle des Animaux*, folio, 1676, with figures; *Essais de Physique*, 4 vols 12mo, 1688; *Recueil des plusieurs machines de nouvelle invention*, 4to, 1700, &c. He died in 1688.

(3, 4.) PERRAULT, Nicholas, and Peter, brothers of the two last, made themselves also known in the literary world.

PERREAS. See PARIAS.

PERRECY, a town of France, in the dep. of Saone and Loire, 10½ miles NW. of Charolles.

PERREUX, a town of France, in the dep. of Rhone and Loire; 3 miles E. of Roanne.

PERRIERS, a town of France, in the dep. of the Channel; 8 miles N. of Coutances.

PERRITIO, a river of Naples which runs into the Crate, in Calabria Citra.

PERRON, James Davy Du, a cardinal distinguished by his abilities and learning, born in Bern, in 1556; and educated by Julian Davy, his father, a very learned Calvinist. Philip Desportes, abbot of Tyron, made him known to Henry III. king of France, who conceived a great esteem for him. Sometime after Du Perron abjured Calvinism, and embraced the ecclesiastical function. After the murder of Henry III. he retired to the house of Cardinal de Bourbon, and took great pains in bringing back the Protestants to the church of Rome. He chiefly contributed to engage Henry IV. to change his religion; and that prince sent him to negotiate his reconciliation to the holy see, in which he succeeded. Du Perron was consecrated bishop of Evreux while he resided at Rome. He was made Cardinal in 1604 by pope Clement VIII. at the solicitation of Henry IV. who afterwards nominated him to the archbishopric of Sens. He also sent him to Rome with Cardinal Joyeuse, in order to terminate the disputes between Paul V. and the Venetians. He died at Paris in 1618. His works were collected after his death, and published at Paris in 3 vols folio.

PERROS GUERIC, a town of France in the dep. of the North Coasts; 4½ miles N. of Lannion.

PERROT, Nicholas, lord of Ablancourt, a man of uncommon genius, born at Chalons in 1606. After studying philosophy about 3 years, he was sent to Paris to follow the law. At 18 years of age he was admitted advocate of parliament, but soon discontinued his practice. In 1637 he was admitted a member of the French academy; he died in 1664. His works are mostly translations.

PERRUKE, PERUKE, or *Peruwig*, was anciently a name for a long head of natural hair; such particularly, as there was care taken in the adjusting and trimming of. The Latins called it *coma*; whence part of Gaul took the denomination of *Gallia Comata*, from the long hair which the inhabitants wore as a sign of freedom. The word is now used for a set of false hair, curled, buckled,

and sewed together on a frame or cawl; anciently called *capillamentum* or "false peruke." The ancients used false hair, but the use of perukes, in their present mode, has not existed two centuries.

(1.) PERRY, Capt. John, an engineer, who resided long in Russia, having been recommended to the czar Peter, while in England, as a person capable of serving him on a variety of occasions relating to his new design of establishing a fleet, making his rivers navigable, &c. He was author of *The State of Russia*, 1716, 8vo, and *An Account of the stopping of Dagueham Breach*, 1719, 8vo. He died Feb. 11, 1733.

(2.) PERRY, a small town of Huntingdonshire, in the parish of Great Stoughton.

(3.) * PERRY. *n. f.* [*poire*, Fr. from *poire*.] Cyder made of pears.—Perry is the next liquor in esteem after cyder. *Mortimer*.

(4.) PERRY, the best pears for perry are those which are most tart and harsh. Of these the Bosbury pear, the Barend pear, and the horse pear, are the most esteemed for perry in Worcestershire, and the squash pear, in Gloucestershire.

(1.) PERSAIN, a river of Asia in Pegue, which runs from the Ava, into the Bay of Bengal.

(2.) PERSAIN, a town of Pegue, on the above river, 132 miles SW. of Pegue, and 252 SSE. of Arracan.

PERSANTE, a river of Pomerania, which runs into the Baltic below Colberg.

PERSCHILING, a town and river of Austria. The river runs into the Danube, 3 miles above Tulln.

* To PERSECUTE. *v. a.* [*persecuter*, Fr. *persecutus*, Lat.] 1. To harass with penalties; to pursue with malignity. It is generally used of penalties inflicted for opinions.—I persecuted this way unto the death. *Acts* xxii. 4. 2. To pursue with repeated acts of vengeance or enmity.—

Relate,

For what offence the queen of heav'n began

To persecute to brave, so just a man! *Dryden*.

3. To importune much: as, he persecutes me with daily solicitations.

(1.) * PERSECUTION. *n. f.* [*persecution*, Fr. *persecutio*, Lat. from *persecute*.] 1. The act or practice of persecuting.—The Jews raised persecution against Paul and Barnabas, and expelled them. *Acts* xiii. 50.—He endeavoured to prepare his charge for the reception of the impending persecution. *Fell*.—

Heavy persecution shall arise.

Milton.

—Those who lived in the ages of persecution. *Ad-dison*. 2. The state of being persecuted.—Our necks are under persecution. *Lam. v.* 5.—Christian fortitude and patience had their opportunity in times of affliction and persecution. *Spratt*.

(2.) PERSECUTION, in a more restrained sense, is the sufferings of Christians on account of their religion. Historians usually reckon ten general persecutions, the first of which was under the emperor Nero, 31 years after our Lord's ascension; when that emperor having set fire to the city of Rome, threw the odium of that execrable action on the Christians, who under that pretence were wrapped up in the skins of wild beasts and worried and devoured by dogs; others were crucified, and others burnt alive. The second was under

der Domitian, in the year 95. In this persecution, St John the apostle was sent to the isle of Patmos, in order to be employed in digging in the mines. The third began in the third year of Trajan, in the year 100, and was carried on with great violence for several years. The fourth was under Antoninus the philosopher, when the Christians were banished from their houses, forbidden to show their heads, reproached, beaten, hurried from place to place, plundered, imprisoned, and stoned. The fifth began in the year 197, under the emperor Severus. The sixth began with the reign of the emperor Maximinus in 235. The seventh, which was the most dreadful persecution that had ever been known in the church, began in the year 250, in the reign of the emperor Decius, when the Christians were in all places driven from their habitations, stripped of their estates, tormented with racks, &c. The eighth began in the year 303, in the fourth year of the reign of the emperor Valerian. The ninth was under the emperor Aurelian, A. D. 274; but this was very inconsiderable: and the tenth began in the 19th year of Dioclesian, A. D. 303. In this dreadful persecution, which lasted ten years, houses filled with Christians were set on fire, and whole droves were tied together with ropes, and thrown into the sea. See TOLERATION.

* **PERSECUTOR.** *n. f.* [*persecutor*, Fr. from *persecute*.] One who harasses others with continued malignity.

Against such cruelties

With inward consolations recompens'd;

And oft supported so, as shall amaze

Their proudest persecutors.

Milton.

—Henry became a cruel persecutor. *Swiss.*

PERSEES, the descendants of a colony of ancient Persians, who took refuge at Bombay, Surat, and in the vicinity of those cities, when their own country was conquered 1100 years ago by the Mahometan Arabs. They are a gentle, quiet, and industrious people, loved by the Hindoos, and living in great harmony among themselves. The consequence is, that they multiply exceedingly, whilst their countrymen in the province of Kerman are visibly diminishing under the yoke of the Mahometan Persians.

PERSEPOLIS, formerly the capital of Persia, situated in N. Lat. 30. 30. E. Lon. 84.; now in ruins, but remarkable for the most magnificent remains of a palace or temple that are to be found throughout the world.—This city stood in one of the finest plains in Persia, being 18 or 19 leagues in length, and in some places two, in some four, and in others six leagues in breadth. It is watered by the great river Araxes, now Bendemir, and by a multitude of rivulets besides. Within the compass of this plain, there were between 1000 and 1500 villages, without reckoning those in the mountains, all adorned with pleasant gardens, and planted with shady trees. They are now the shelter of beasts and birds of prey.

PERSES, the last king of Macedonia. See **MACHON**, § 18. and 19.

* **PERSEVERANCE.** *n. f.* [*perseverance*, Fr. *perseverantia*, Lat. This word was once improperly accented on the second syllable.] 1. Persistence in any design or attempt: steadiness in

pursuits; constancy in progress. It is applied alike to good and ill.—

The king-becoming graces,
Bounty, *perseverance*, mercy, lowliness. *Shak.*
Perseverance keeps honour bright. *Shak.*

—They hate repentance more than *perseverance* in a fault. *King Charles.*—Wait the seasons of providence with patience and *perseverance*. *L'Espr.*—Patience and *perseverance* overcome the greatest difficulties. *Clarissa.*—

And *perseverance* with his batter'd shield.

Brooke.

2. Continuance in a state of grace.—We place the grace of God in the throne, to rule and reign in the whole work of conversion, *perseverance*, and salvation. *Hammond.*

(1.) **PERSEVERANCE**, in theology, a continuance in a state of grace to a state of glory. About this subject there has been much controversy in the Christian church. All divines, except Unitarians, admit, that no man can ever be in a state of grace without the co-operation of the Spirit of God; but the Calvinists and Arminians differ widely as to the nature of this co-operation. The former, at least such as call themselves the *true disciples of Calvin*, believe, that those who are once under the influence of divine grace can never fall totally from it, or die in mortal sin. The Arminians, on the other hand, contend that the whole of this life is a state of probation; that without the grace of God we can do nothing that is good; that the Holy Spirit assists, but does not overpower our natural faculties; and that a man, at any period of his life, may resist, grieve, and even quench the Spirit. See **THEOLOGY**.

* **PERSEVERANT.** *adj.* [*perseverant*, Fr. *perseverans*, Lat.] Persisting; constant. *Ansforth.*

* **To PERSEVERE.** *v. n.* [*persevero*, Lat. *perseverer*, Fr. This word was anciently accented less properly on the second syllable.] To persist in an attempt; not to give over; not to quit the design.—

But in her pride she doth *persevere* still. *Spens.*

Thrice happy, if they know

Their happiness, and *persevere* upright! *Milton.*

Thus beginning, thus we *persevere*. *Dryden.*

—To *persevere* in any evil course, makes you unhappy in this life. *Wake.*

* **PERSEVERINGLY.** *adv.* [from *persevere*.] With perseverance.

(1.) **PERSEUS**, in fabulous history, the son of Jupiter by Danaë, the daughter of K. Acrisius. See **ACRISIUS** and **DANAË**. Many miracles are related of this hero, by the poets. Having engaged to bring the head of Medusa to Polydectes, K. of Seriphos, who had educated him, Minerva gave him her shield, Mercury lent him his wings and caduceus, with his dagger made of diamonds, called *berpe*; and Pluto lent him his helmet, which rendered him invisible. Thus equipped, Perseus flew through the air, visited the *Graie*, and their sisters the *GORGONS*; killed **MEDUSA**, and brought away her head; gave birth to **PEGASUS** and *Chrysaor* from her blood; turned the giant Atlas into a mountain by a sight of her head; killed the sea monster that was going to devour Andromeda; married that princess; changed her uncle Phineus and his troops, who

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were

were going to carry her off from him, into stones; and made the same metamorphosis upon Polydeces when he was going to ravish Danae. Having afterwards killed his grandfather Acrisius accidentally, by throwing a quoit, he refused to succeed him in the throne of Argos, and exchanged it for that of Tirynthus; after which he founded the city of Mycenæ, of which he became king, and where he and his posterity reigned for 100 years. He flourished, according to most chronologists, in 1348 B. C.; but, according to Sir Isaac Newton, only in 1028.

(2.) PERSEUS, in astronomy. See ASTRONOMY, § 548.

(3.) PERSEUS. See MACEDON, § 18, 19. This unfortunate monarch left a daughter and two sons, Philip and Alexander. The latter was bred a carpenter, but having acquired some learning, became secretary to the senate of Rome.

PERSHORE, a town of Worcestershire, on the Avon, 9 miles ESE. of Worcester, and 102 WNW. of London. It has 300 houses, and markets on Tues. and Sat. Lon. 1. 44. W. Lat. 52. 4. N.

(1.) PERSIA, a most ancient and celebrated empire of Asia, extending in length from the mouth of the Araxes to that of the Indus, about 1840 miles, and in breadth, from the Oxus to the Persian gulph, about 1280. It is bounded on the N. by the Caspian Sea, the Oxus, and Mount Caucasus; on the E. by the Indus and the dominions of the Great Mogul; on the S. by the Persian gulph and the Indian ocean; and on the W. by the dominions of the Grand Signior. We learn from Sir William Jones, that Persia is the name of only one province of this extensive empire, which, by the present natives, and all the learned *Mussulmans* who reside in the British territories in India, is called *Irân*. It has been a practice common in all ages to denominate the whole of a country from that part of it with which we are best acquainted; and hence have the Europeans agreed to call Iran by the name of that province of which Shirauz is the capital. See SHIRAUZ. The same learned writer is confident that Iran, or Persia in its largest extent, comprehended within its outline the lower Asia, which, says he, was unquestionably a part of the *Perfian*, if not of the old Assyrian empire.

(2.) PERSIA, ANCIENT NAMES AND FIRST SETTLEMENT OF. The most ancient name, however, of this country, was that of *Elam*, or, as some write it, *Elam*, from Elam the son of Shem, from whom its first inhabitants are descended. Herodotus calls its inhabitants *Cephenes*; and in very ancient times the people are said to have called themselves *Araï*, and the country where they dwelt *Artae*. In the books of Daniel, Ebedrae, &c. it is called by the names of *Pars*, *Pharai*, or *Fars*, whence the modern name of *Persia*; but whence those names have been derived, is now uncertain. That Persia was originally peopled by Elam the son of Shem, has been very generally admitted; but the ancient history of this distinguished empire is very little known. The first *Perfian* emperor of whom any thing is known with tolerable accuracy, was the great CYRUS, although it is evident that a powerful monarchy had subsisted in Iran for ages before the accession

of that hero; that this monarchy was called the *Mahébidian* dynasty; and that it was in fact the oldest monarchy in the world.

(3.) PERSIA, CLIMATE AND SEASONS OF. The air and climate of this country, considering the great extent thereof, cannot but be very different, according to the situation of its several parts; some being frozen with cold, whilst others are burnt with heat at the same time of the year. The air, wherever it is cold, is dry; but where it is extremely hot, it is sometimes moist. All along the coast of the Persian gulph, from W. to E. to the mouth of the Indus, the heat for four months is so excessive, that even the natives, unable to bear it, are forced to quit their houses, and retire to the mountains; so that such as travel in these parts, at that season, find none in the villages but wretched poor creatures, left there to watch the effects of the rich, at the expence of their own health. The extreme heat of the air, as it is insupportable, so it makes it prodigiously unwholesome; strangers frequently falling sick there, and seldom escaping. The eastern provinces of Persia, from the Indus to the borders of Tartary, are subject to great heats, though not quite so unwholesome as on the coasts of the Indian Ocean and the Persian Gulph; but in the northern provinces, on the coast of the Caspian Sea, the heat is full as great, and, being attended with moisture, as unwholesome as on the coast before mentioned. From October to May, there is no country in the world more pleasant than this; but the people carry indelible marks of the malign influence of their summers, looking all of a faint yellow, and having neither strength nor spirits; though, about the end of April, they abandon their houses, and retire to the mountains, which are 25 or 30 leagues from the sea. But this moistness in the air is only in these parts; the rest of Persia enjoys a dry air, the sky being perfectly serene, and hardly so much as a cloud seen to fly therein. Though it seldom rains, the heat admits of mitigation; for in the night, when there is not a cloud to be seen, and the sky is so clear, and the stars afford a strong light, a brisk wind springs up, which lasts until within an hour of the morning, and gives a refreshing coolness to the air. The seasons in general, and particularly in the middle of this kingdom, happen thus: the winter, beginning in November, and lasting until March, is very sharp and rude, attended with frost and snow; which last descends in great flakes on the mountains, but never in the plains. The climate of Shirauz, the capital of Persia Proper, is represented by a traveller who lately visited it as one of the most agreeable in the world, the extremes of heat and cold being seldom felt. See SHIRAUZ. The great dryness of the air exempts Persia from thunder and earthquakes. In the spring, indeed, there sometimes falls hail; and, as the harvest is then pretty far advanced, it does a great deal of mischief. The rainbow is seldom seen in this country, because there is not vapours enough to form it; but in the night there are seen rays of light shooting through the firmament, and followed as it were by a train of smoke. The winds, however brisk, seldom swell into storms or tempests; but they are sometimes poisonous

sonous and infectious on the shores of the Gulph. Mr Tavernier says, that at Gombroon people often find themselves struck by a south wind, in such a manner that they cry, *I burn!* and immediately fall down dead. M. Le Brun tells us, that he was assured while he was there, that the weather was sometimes so excessively hot as to melt the seals of letters. At this time the people go in their shirts, and are continually sprinkled with cold water; and some even lie several hours naked in the water. Among the inconveniences consequent from this malign disposition of the air, one of the most terrible is the engendering in the arms and legs a kind of long small worms, which cannot be extracted without great danger of breaking them; upon which a mortification ensues.

(4.) PERSIA, GOVERNMENT OF. Persia is an absolute monarchy, the lives and estates of the people being entirely at the disposal of their prince. The king has no council established, but is advised by such ministers as are most in favour; and the resolutions taken among the women of the harem frequently defeat the best laid designs. The crown is hereditary, excluding only the females. The sons of a daughter are allowed to inherit. The laws of Persia exclude the blind from the throne; which is the reason that the reigning prince usually orders the eyes of all the males of the royal family, of whom he has any jealousy, to be put out. The king has generally a great number of wives, which it would be death for any one, besides the eunuchs, who have the superintendence of them, to look at, or even see by accident; wherefore, when he travels, notice is given to all men to quit the road, nay, their very houses, and to retire to a great distance. The prime minister is called the *amaat doulet*, which signifies the director of the empire, and also *vizir acem*, or the great supporter of the empire; as he alone almost sustains the whole weight of the administration. This minister's chief study is to please his master, to secure to himself an ascendancy over his mind, and to avoid whatever may give him any uneasiness or umbrage. With this view, he never fails to flatter him, to extol him above all the princes upon earth, and to throw a thick veil over every thing that might help to open his eyes, or discover to him the weakness of the state. He takes particular care to keep the king in utter ignorance, to hide from him all unwelcome news, and to exalt immoderately every advantage he obtains over his enemies. In like manner the inferior officers and governors of provinces employ all the means in their power to secure the prime minister's favour. There is a gradation of despotism and slavery, down from the prime minister to the lowest retainer of the court, or dependant on the government. Children are sometimes in Persia required by the king to cut off the ears and nose, and even to cut the throats of their parents; and these orders cannot be objected to, without endangering their own lives. Indeed their baseness and mercenariness are such, that they will perpetrate such atrocious deeds without the least scruple, when they have a promise of possessing their posts. The prime ministers, notwithstanding the precarious footing on which they stand, sometimes continue in their employments

during life. Next to the prime minister are the *nadir*, or grand master of the household; the *mehter*, or groom of the chambers, who is always a white eunuch; the *mirakbor boshe*, or master of the horse; the *mir-shakarbeggi*, or great huntsman and falconer; the *divanbeggi*, or chief justice, to whom there lies an appeal from the *deroga*, or the lieutenant of police, in every town; the *vacka-muvies*, or recorder of events, or first secretary of state; the *muslaw-sh-elemenack*, or master of the accounts and finances of the kingdom; the *numes bumbasbes*, or the king's chief physicians; the *shickada shashe*, or inspector of the palace, and regulator of rank at court; and the *khams*, or governors of provinces, under whom are other governors, called *soltans*, appointed also by the king. Civil matters are all determined by the *cazi*, and ecclesiastical ones (particularly divorces) by the *shieck-el-ileum*, or head of the faith; an officer answering to the mufti among the Turks: under him are the *shieck-el-ileum*, and *sadi*, who decide in all matters of religion, and make all contracts, testaments, and other public deeds, being appointed by the king in all the principal towns; and next to these are the *pich namas*, or directors of the prayers, and the *moullabs*, or doctors of the law. Justice is carried on in Persia in a very summary manner; the sentence being always put into execution on the spot. Theft is generally punished with the loss of nose and ears; and highway robbery by ripping up the belly of the criminal; in which situation he is exposed upon a gibbet in one of the most public parts of the city, and there left until he expires in torment. There is no nobility in Persia, nor is any respect shown to a man on account of his family, except those who are of their great prophet or patriarchs; but every man is esteemed according to the post he possesses; and when he is dismissed, he loses his honour, and he is no longer distinguished from the vulgar.

(5.) PERSIA, HISTORY OF, FROM CYRUS'S BIRTH TO HIS DEATH. Cyrus is celebrated both by sacred and profane historians; but the latter are at no small variance concerning his birth and accession to the throne. The stories told by Herodotus, of ASTYAGES, the last king of the Medes, being alarmed by his dreams; of his endeavouring to prevent their fulfilment by marrying his daughter, Mandane, to a mean Persian; of his afterwards ordering his grandson Cyrus to be murdered; of his preservation by Harpagus, and of Astyages's barbarous revenge by murdering Harpagus's son, and serving up his mangled limbs to Harpagus at a dinner; and of Harpagus conspiring with Cyrus to dethrone his grandfather; with Astyages's deposition and imprisonment; have all very much the air of a fable. According to Xenophon, Cyrus was the son of Cambyzes king of Persia, and Mandane the daughter of Astyages king of Media. He was born a year after his uncle Cyaxares, the brother of Mandane. He lived till the age of 32 with his parents in Persia, being educated after the manner of the country, and inured to fatigues and military exercises. At this age he was taken to the court of Astyages, where he resided four years, when the revolt of the Medes and Persians from the Babylonians happened.

opened. See **BABYLONIA**, § 2. While Cyrus was employed in the Babylonish war, before he attacked the metropolis itself, he reduced all the nations of Asia Minor. The most formidable of these were the Lydians, whose king **CROESUS** assembled a very numerous army, composed of all the other nations in that part of Asia, as well as of Egyptians, Greeks, and Thracians. This vast army, consisting of 420,000 men, Cyrus routed at the battle of Thymbra, and next day took Sardis, the capital of Lydia. (See **CROESUS**, and **LYDIA**.) After the conquest of Sardis, Cyrus turned his arms against Babylon, which he reduced, as related under **BABYLONIA**, § 2. Having settled the civil government of the conquered kingdoms, and restored the Jews to their own land, (See **JEWS**, § 3.) Cyrus took a review of all his forces, which he found to consist of 600,000 foot, 120,000 horse, and 1000 chariots armed with scythes. With these he extended his dominion all over the nations to the confines of Ethiopia, and to the Red Sea; after which he continued to reign peaceably over his vast empire till his death, which happened about A. C. 529. In the time of Cyrus, the Persian empire extended from the Indus to the Ægean Sea. On the N. it was bounded by the Euxine and Caspian Seas, and on the S. by Ethiopia and Arabia. That monarch kept his residence for the seven cold months at Babylon, by reason of the warmth of that climate; three months in the spring he spent at Susa, and two at Ecbatan during the heat of summer.

(6.) **PERSIA, HISTORY OF, FROM CYRUS'S DEATH TO THAT OF CAMBYSES.** Cyrus on his death-bed appointed his son Cambyzes to succeed him in the empire; and to his other son, Smerdis, he gave several considerable governments. The new monarch immediately set about the conquest of Egypt; which he accomplished in the manner related in the history of that country. (See **EGYPT**, § 10.) Having reduced Egypt, Cambyzes next resolved to turn his arms against the Carthaginians, Hammonians, and Ethiopians. But he was obliged to drop the first of these enterprises, for want of ships. And in attempting to cross the Desert against the latter, he lost the greater part of an immense army, and was obliged to return to Thebes. Through jealousy of his brother Smerdis, he had caused him to be murdered, but during his absence on this expedition, a magian, who greatly resembled Smerdis in looks, assumed the name of the deceased prince, and raised a rebellion against Cambyzes, who was generally hated for his cruelty. Hastening home to suppress this revolt, his sword accidentally wounded him in the thigh, which occasioned his death.

(7.) **PERSIA, HISTORY OF, FROM CAMBYSES'S DEATH TO THAT OF SMERDIS MAGUS.** Though Cambyzes had on his death-bed informed the nobles of the murder of his brother, and that the person who had usurped the government was an imposter, yet they gave no credit to his assurances. Smerdis the magian was allowed to take possession of the throne in peace, and commenced his reign very popularly. The imposition was however soon detected, the false Smerdis having formerly lost his ears; the person who had killed the true Smerdis publicly confessed his crime; a confederacy

of seven principal lords was formed against the usurper, and he and his brother **PATIZITHES** were slain, after a reign of only 8 months. Nor were they the only sufferers. The mob fell upon the magi, and made a general massacre of them; the memory of which was kept up long after, by an anniversary festival, called **MAGOPHONIA**.

(8.) **PERSIA, HISTORY OF, FROM DARIUS I.'S ACCESSION TO THAT OF XERXES.** Six of the noble conspirators having determined to choose a king from among themselves, by repairing on horse-back to a particular spot, and bestowing the crown on him whose horse first neighed, Darius the son of Hytaspes governor of Susa was put in possession of this dignity, by the sagacity of his groom. He was elected king of Persia in the year 522 B. C. Immediately after his accession, he promoted the other six conspirators to the first employments in the kingdom, married the two daughters of Cyrus, Atossa and Artystona, Parmys the daughter of the true Smerdis, and Pseudyma the daughter of Otanes, who had detected the imposture of the magi. He then divided the whole empire into 30 satrapies or governments, and appointed a governor over each division, ordering them to pay him an annual tribute. Under Darius, the building of the temple of Jerusalem, which had been obstructed by Cambyzes and Smerdis, went on successfully, and the Jewish state was entirely restored. The most remarkable of Darius's other transactions were his expeditions against Babylon; against Scythia, India, and Greece. The expedition against Babylon took place A. A. C. 517. The inhabitants of that city having laid up a stock of provision for several years, and strangled all the old people and children, and those whom they considered unnecessary, shut themselves up, and withstood the siege of Darius and all his forces for a year and 8 months, and would most probably have succeeded in tiring them out; but Zopyrus, one of Darius's generals, having cut off his own nose and ears, persuaded them he had been thus barbarously treated by the monarch, and was desirous of revenge; so they intrusted to him the guard of the city, which he delivered up to the Persians. Darius beat down the walls of that metropolis to the height of 50 cubits: 3000 of the most active in the rebellion were impaled; the rest pardoned. After the reduction of Babylon, Darius undertook a Scythian expedition, directed against those nations which lie between the Danube and the Tanais. In this however he was not so fortunate. He led 700,000 men into Scythia, but the inhabitants, two wise to oppose so vast an army in the field, retreated before him, wasting the country as they fled. Seeing the imminent danger his army were in of perishing for want, he began his retreat, which he effected with the loss of the old and sick, whom he left behind him. India, however, felt and submitted to the prowess of his army. (See **INDIA**, § 5.) He reduced that large country, and made it a province of the Persian empire, drawing from thence an annual tribute of 360 talents of gold. For an account of his expedition to Greece, see **ATICA**, § 11. The ill success which attended him here, however, was so far from making him drop the enterprise, that it only made him the more intent

intent on reducing the Grecians; and he resolved to head his army in person, having attributed his former bad success to the inexperience of his generals. But while he was making the necessary preparations for this purpose, he received intelligence that the Egyptians had revolted, so that he was obliged to make preparations for reducing them also; and before this could be done, the king died, after having reigned 36 years, leaving the throne to his son Xerxes.

(9.) PERSIA, HISTORY OF, FROM XERXES'S ACCESSION TO HIS DEATH. This prince ascended the throne of Persia in the year 485 B. C.; and his first enterprise was to reduce the Egyptians; which he effectually did, bringing them into a worse state of slavery than they ever had experienced before. After this he resolved on an expedition into Greece; the unfortunate event of which is related under ATTICA, § 11. By his misfortunes in the Grecian expedition, he became at last so dispirited, that he thenceforth abandoned all thoughts of war and conquests; but growing tyrannical, and oppressing his subjects, he was murdered in his bed, A. A. C. 464, and 21st of his reign; and was succeeded by his third son Artaxerxes, surnamed *Longimanus* on account of the great length of his arms.

(1.) PERSIA, HISTORY OF, TILL ARTAXERXES I.'S DEATH. This prince is named *Ahasuerus* in Scripture, and is the same who married Esther, and during the whole of his reign, showed the greatest kindness to the Jewish nation. In the beginning of his reign he was opposed by Hystaspes the 2d son of Xerxes, whom, however, he overcame, though not without considerable difficulty. After this he settled the affairs of government, and reformed many abuses which had crept in; and then, being fully established on the throne, he appointed feasts and rejoicings to be made for 180 days in the city of Susa; at one of which he resolved to divorce his queen for disobedience; and afterwards married Esther, as recorded Est. ii. 1—18. In the 5th year of his reign, the Egyptians revolted anew, and, being assisted by the Athenians, held out for six years; but were again obliged to submit, and continued in subjection during the whole of his reign. Nothing else remarkable happened during the life of Artaxerxes Longimanus, who died in the 41st year of his reign; and was succeeded by Xerxes II. the only son he had by his queen, though by his concubines he had 17.

(11.) PERSIA, HISTORY OF, TILL DARIUS II.'S DEATH. Xerxes II. having drunk immoderately at an entertainment immediately after his accession, retired to a chamber to refresh himself with sleep; but here he was murdered by Sogdianus, the son of Artaxerxes by one of his concubines, after he had reigned 45 days. Sogdianus was scarce seated on the throne when he put to death Bagorazus, the most faithful of all his father's eunuchs; by which, and the murder of his sovereign, he became generally odious. He next sent for his brother Ochus, intending to murder him; but Ochus having collected a great army under pretence of avenging the death of Xerxes, and being joined by many of the nobles and governors of provinces, Sogdianus proposed an accommodation with

Ochus; who no sooner had him in his power than he caused him to be suffocated among ashes; a punishment invented on purpose for him. Ochus, being settled on the throne, changed his name to Darius; and is by historians commonly called *Darius Nottus*, or *The Bassard*. But Aristes, another of the brothers, seeing how Sogdianus had got the better of Xerxes, and Ochus of him, attempted to treat Ochus in the same manner. He was not, however, so successful; for being defeated in an engagement, he surrendered, but was immediately put to death by suffocation in ashes. Several other persons were executed: but these severities did not procure him repose, for his whole reign was disturbed with violent commotions in various parts of the empire. One of the most dangerous was raised by Pisuthnes governor of Lydia; but he, being deserted by his Greek mercenaries, was overcome, and put to death. His son Amorgas continued to infect the maritime provinces of Asia Minor for two years; till he also was taken and put to death by Tissaphernes, governor of Lydia. Other insurrections quickly followed; particularly that of the Egyptians, who could not be reduced. Before his death Darius invested Cyrus his youngest son with the supreme government of all Asia Minor. This was done through the persuasion of his mother PARYSATIS, who had an absolute sway over her husband; and she procured this command for him, that he might thereby be enabled to contend for the kingdom after his father's death. He died A. A. C. 405, and was succeeded by his son Artaxerxes, by the Greeks surnamed *Mnemon*, on account of his extraordinary memory.

(12.) PERSIA, HISTORY OF, TILL THE DEATH OF ARTAXERXES II. The most remarkable transaction during the reign of this prince was the revolt of his brother Cyrus. He began with gaining over the cities under Tissaphernes; which quickly produced a war with that governor. Cyrus then began to assemble troops, which he pretended were designed only against Tissaphernes. As he had given great assistance to the Spartans in their wars against the Athenians, he now demanded assistance from them; which they very readily granted. Cyrus, having thus collected an army of 13,000 Greek mercenaries and 100,000 regular troops of other nations, set out from Sardis, towards Upper Asia. Having arrived at Cunaxa in Babylon, Cyrus found his brother with 900,000 men ready to engage him. Clearchus, the commander of the Peloponnesian troops, advised Cyrus not to charge in person, but to remain in the rear of the Greek battalions; but he replied, that he should thus render himself unworthy of the crown for which he was fighting. As the king's army drew near, the Greeks fell upon them with such fury, that they routed the wing opposite to them almost at the first onset; upon which Cyrus was with loud shouts proclaimed king by those next to him. But he, perceiving that Artaxerxes was wheeling about to attack him in flank, advanced against him with 600 chosen horse, killed Artageses captain of the king's guards, with his own hand, and put the whole body to flight. In this encounter, discovering his brother, he spurred on his horse, and, coming up

up to him, engaged him with great fury. Cyrus killed his brother's horse, and wounded him on the ground; but he immediately mounted another horse, when Cyrus attacked him again, and gave him a second wound; when the guards, perceiving the king's danger, discharged their arrows against Cyrus, who at the same time was pierced through by his brother's javelin. He fell dead upon the spot; and all the chief lords of his court were slain with him. In the mean time, the Greeks having defeated the enemy's left wing commanded by Tissaphernes, and the king's right wing having put to flight Cyrus's left, both parties imagined that they had gained the victory. But Tissaphernes acquainting the king that his men had been put to flight by the Greeks, he immediately rallied his troops to attack them. The Greeks under Clearchus, easily repulsed them, and pursued them to the foot of the neighbouring hills. As night was drawing near, they returned to their camp, but found that the greatest part of their baggage had been plundered, and all their provisions taken. The next morning they received the news of Cyrus's death, and the defeat of the army under him. Whereupon they sent deputies to Arizus, commander in chief of all the other forces of Cyrus, offering him the crown of Persia. Arizus rejected the offer, and acquainting them that he intended to set out on his return to Ionia, and advised them to join him in the night. They followed his directions, and, under Clearchus, arrived at his camp about midnight, whence they set out on their return to Greece. They were at a vast distance from their own country, in the very heart of the Persian empire, surrounded by a victorious and numerous army, and had no way to return again, but by forcing their way through an immense track of the enemy's country. But their valour and resolution mastered all these difficulties; and, in spite of a powerful army, which pursued and harassed them all the way, they made good their retreat for 2325 miles through the provinces belonging to the enemy, and got safe to the Greek cities on the Euxine sea. This retreat (the longest that ever was made through an enemy's country) was conducted at first by Clearchus; but he being cut off through the treachery of Tissaphernes, Xenophon was chosen in his room, who at last brought his men safe into Greece. (See XENOPHON.) The war with Cyrus was scarce ended, when another broke out with the Spartans, on the following account. Tissaphernes being appointed to succeed Cyrus in all his power, to which was added all which he himself possessed formerly, began to oppress the Greek cities in Asia in a most cruel manner. On this they sent ambassadors to Sparta, desiring assistance. The Spartans having ended their long war with the Athenians, willingly laid hold of this opportunity of breaking with the Persians, and therefore sent against them an army under the command of Thimbro, who, being strengthened by the forces which returned under Xenophon, took the field against Tissaphernes. But Thimbro being recalled, Dercyllidas, a brave officer, was appointed to succeed him; and he carried on the war to much more advantage. Finding that Tissaphernes was at variance with another governor

named *Pharnabazus*, he concluded a truce with the former, and marching against Pharnabazus, drove him quite out of Æolis, and took several cities in other parts. The latter repaired to the Persian court, complained against Tissaphernes, and advised the king to equip a powerful fleet, and give the command of it to Conon the Athenian, by which he would obstruct the passage of further recruits from Greece; and thus soon put an end to the power of the Spartans in Asia. The king accordingly ordered 500 talents for the equipment of a fleet, and appointed Conon commander of it. The Spartans hearing of this, sent over Agefilas one of their kings, and a most experienced commander, into Asia. This was done with such secrecy, that Agefilas arrived at Ephesus before the Persians had the least notice of his designs. He took the field with 10,000 foot and 4000 horse, and falling upon the enemy, while totally unprepared, carried every thing before him. Tissaphernes deceived him into a truce till he got his troops assembled, but gained little by his treachery; for Agefilas deceived him in his turn, and while Tissaphernes marched his troops into Caria, the Greeks invaded and plundered Phrygia. After various other deceptive manoeuvres on each side, Agefilas led his troops against Sardis; and Tissaphernes having dispatched a body of horse to its relief, Agefilas fell upon them before the foot could come to their assistance. The Persians were routed at the first onset; after which Agefilas over-ran the whole country, enriching his army with the spoils. By this continued ill fortune Artaxerxes was so much provoked against Tissaphernes, that he caused him to be put to death. Tithraustes, who was appointed to succeed him, sent large presents to Agefilas, to bribe him to abandon his conquests; but finding him determined not to relinquish the war, he sent Timocrates of Rhodes into Greece, with money to bribe the leading men in the cities, and rekindle a war against the Spartans. Accordingly the cities of Thebes, Argos, Corinth, &c. entering into a confederacy, obliged them to recal Agefilas to defend Sparta. After his departure, which happened A. C. 354, the Spartan power received a severe blow at Cnidos, where their fleet was entirely defeated by that of Artaxerxes under Conon, 50 of their ships being taken in the engagement; after which, Conon and Pharnabazus being masters of the sea, sailed round the islands and coasts of Asia, taking the cities there which had been reduced by the Spartans. Sestos and Abydos only held out, and resisted the utmost efforts of the enemy, though they had been besieged both by sea and land. Next year Conon having assembled a powerful fleet, again took Pharnabazus on board, and reduced the island of Melos, from whence he made a descent on the coasts of Lycæonia, pillaging all the maritime provinces, and loading his fleet with an immense booty. After this, Conon obtained leave to return to Athens with 80 ships and 50 talents, to rebuild the walls of that city. Having a great number of hands, the work was soon completed, and the city not only restored to its former splendor, but rendered more formidable than ever. The Spartans were soon reduced to the necessity

of making peace. The terms were, that all the Greek cities in Asia should be subject to the king of Persia, also the islands of Cyprus and Clazomena; that Scyros, Lemnos, and Imbros, should be restored to the Athenians, and all the cities of Greece declared free. Artaxerxes engaged to join those who accepted these terms, and to assist them against such as should reject them. Artaxerxes being now disengaged from the Grecian war, turned his arms against Evagoras king of Cyprus, who was defended from the ancient kings of Salamine, the capital of Cyprus. His ancestors had reigned there for many ages, but were at last driven out by the Persians, who reduced the island to a Persian province. Evagoras, however, being a man of an enterprising genius, drove out the Persian governor and recovered Salamine. Artaxerxes attempted to drive him out of it; but Conon, by means of Ctesias, chief physician to Artaxerxes, got all differences accommodated. But Evagoras gradually reduced under his subjection almost the whole of the island. Some towns, however, held out against him, and applied to Artaxerxes for assistance; who, as soon as the war was at an end, bent all his force against Evagoras. The Athenians, notwithstanding the favours conferred upon them by Artaxerxes, could not forbear assisting their old ally in this emergency; and sent him ten men of war under Philocrates; but the fleet, commanded by Talentias brother to Agefilas, falling in with them near Rhodes, surrounded them so that not one ship escaped. The Athenians sent Chabrias with another fleet and body of land forces; with which he quickly reduced the whole island. But the Athenians being soon after obliged, by a treaty concluded with the Persians, to recall Chabrias, Artaxerxes attacked the island with 300,000 men, and 300 ships. Evagoras applied to the Egyptians, Lybians, Arabians, Tyrians, and other nations, from whom he received supplies both of men and money; and fitted out a fleet, with which he ventured an engagement with that of Artaxerxes. But being defeated, and obliged to shut himself up in Salamine, he was closely besieged, and at last was obliged to capitulate, and give up the whole island except Salamine, which he held as a king tributary to Artaxerxes. The Cyprian war being ended, Artaxerxes turned his arms against the Cadusians, whose country lay between the Euxine and Caspian seas; but was obliged to abandon the project; after having lost a great number of troops and all his horses. In his Egyptian expedition, which happened immediately after the Cadusian war, he was attended with little better success; owing to the bad conduct of Pharnabazus. This commander sent an ambassador to Athens, demanding Iphicrates, the best general of his time, to command the Greek mercenaries in the Persian service. This the Athenians complied with; and Iphicrates having mustered his troops, so exercised them in all the arts of war, that they became famous among the Greeks under the name of *Iphicratean soldiers*. But the Persians were so slow in their preparations, that two whole years elapsed before they were ready to take the field. Artaxerxes, that he

might draw the more mercenaries out of Greece, sent ambassadors to the different states in it, enjoining them to live at peace with each other, on the terms of the treaty lately concluded. All things being ready for the expedition, the troops were mustered at the city then called *Aea*, and since called *Prolemais*; where they amounted to 200,000 Persians under Pharnabazus, and 20,000 Greeks led by Iphicrates. The fleet consisted of 300 galleys, besides a vast number of other vessels which followed with provisions. The fleet and army began to move at the same time; and separated as little as possible. Having made a descent at one of the mouths of the Nile, they took a fortress, and put all the Egyptians in it to the sword. Iphicrates then proposed embarking the troops without loss of time, and attacking Memphis, the capital, which would have rendered it easy to reduce the whole country; but Pharnabazus would undertake nothing before the rest of the forces were come up: neither would he permit Iphicrates to attack the place with the Greek mercenaries only, from a mean jealousy of the honour which he might acquire; and thus the Egyptians recovered courage to put themselves in such a posture of defence, that they could not be attacked with any probability of success; and the Nile overflowing its banks, obliged them to return to Phœnice. The expedition was again undertaken 12 years after, but without success. The last years of Artaxerxes were greatly disturbed by dissensions in his family; and he died in the 94th year of his age and 46th of his reign.

(13.) PERSIA, HISTORY OF, TILL THE DEATH OF ARTAXERXES III. He was succeeded by one of his sons named ARTAXERXES OCHUS, who behaved with such cruelty, that almost one half of his dominions revolted as soon as he came to the throne. But, by the dissensions of the rebels among themselves, all of them were reduced one after another; and the Sidonians, finding themselves betrayed, burnt themselves, to the number of 40,000, together with their wives and children. Artaxerxes Ochus, having quelled all the insurgents, immediately set himself about reducing Egypt, and for this purpose procured a reinforcement of other 20,000 mercenaries from Greece. On this march, he lost a great number of his men in the lake *SERZONIS*. When the S. wind blows, this lake is covered with sand, in such a manner that no one can distinguish it from the firm land. Several parties of Ochus's army were lost in it for want of proper guides; and whole armies have sometimes perished in it. When he arrived in Egypt, he detached three bodies to invade the country; each commanded by a Persian and a Greek. The first was led by Lachares the Theban, and Rosaces governor of Lydia and Ionia; the 2d by Nicostratus the Theban and Aristazanes; the 3d by Mentor the Rhodian and Bagoas an eunuch. The main body of the army he kept with himself, and encamped near Pelusium, to watch the events of the war. The event was successful, and Ochus having reduced the whole country, dismantled their strong holds, plundered the temples, and returned to Babylon loaded with booty; where he conferred high rewards on those who

who had distinguished themselves. To Mentor the Rhodian he gave 100 talents, and other presents; appointed him governor of all the coasts of Asia, and committed to his care the whole management of the war which he was still carrying on, and, either by stratagem or by force, he at last reduced all the provinces that had revolted. Ochus then gave his attention to nothing but his pleasures, leaving the administration of affairs entirely to Bagoas the Eunuch, and to Mentor. These two agreeing to share the power between them, the former had upper Asia, and the latter all the rest. Bagoas, being an Egyptian, had a great zeal for the religion of his country, and endeavoured, on the conquest of Egypt, to influence the king in favour of the Egyptian ceremonies; but, Ochus not only refused to comply, but killed the sacred bull, the emblem of Apis, plundered the temples, and carried away their sacred records. Bagoas in revenge poisoned his master and benefactor in the 21st year of his reign; kept the king's body, causing another to be buried in its stead; and because the king had caused his attendants eat the flesh of Apis, Bagoas cut his body in pieces, and gave it so mangled to be devoured by cats, making handles for swords of his bones. He then placed Arses the youngest of the deceased king's sons on the throne, that he might the more easily preserve the whole power to himself.

(14.) PERSIA, HISTORY OF, TILL THE DEATH OF DARIUS III, AND OVERTHROW OF THE EMPIRE. Arses did not long enjoy even the shadow of power which Bagoas allowed him, being murdered in the 2d year of his reign by that treacherous eunuch, who now conferred the crown on Darius Codomanus, a relation of the royal family. But finding that he would not suffer himself to be guided by him in all things, the treacherous Bagoas brought him a poisonous potion; but Darius got rid of him by his own artifice, causing him to drink the poison which he brought. This established Darius in the throne as far as security from internal enemies could do so; but in a very little time his dominions were invaded, and soon after conquered, by Alexander the Great. The particulars of that hero's conquests are related under MACEDON, § 12, 13; we shall therefore here only take notice of the fate of Darius himself, with which the Persian empire concluded for many ages. After the battle of Arbela, Alexander took and plundered Persepolis, whence he marched into Media, in pursuit of Darius, who had fled to Ecbatan the capital. This prince had still an army of 30,000 foot, among whom were 4000 Greeks, who continued faithful to the last. Besides these, he had 4000 slingers and 3000 horse, most of them Bactrians, commanded by Bessus. When Darius heard that Alexander had marched to Ecbatan, he retired into Bactria, with a design to raise another army; but soon after he determined to venture a battle with the forces he still had left. On this Bessus, governor of Bactria, and Nabarzanes a Persian lord, formed a conspiracy to seize his person, and, if Alexander pursued them, to gain his friendship by betraying their master into his hands; but if they escaped, their design was to murder him, and usurp the

crown. The troops were easily gained over; but Darius himself, when informed of their proceedings, and solicited to trust his person among the Greeks, could not give credit to the report. The consequence was, that he was in a few days seized by the traitors; who bound him with golden chains, and shutting him up in a covered cart, fled with him towards Bactria. The cart was covered with skins, and strangers appointed to drive it without knowing who the prisoner was. Bessus was proclaimed commander and chief by the Bactrian horse; but Artabazus and his sons, with the forces they commanded, and the Greeks, under one Patron, retired from the army under Bessus, and marched over the mountains towards Parthiene. Alexander arriving at Ecbatan, was told that Darius had left the place five days before. He then dispatched orders to Clitus, who had fallen sick at Susa, to repair, as soon as he recovered, to Ecbatan, and thence to follow him into Parthia with the cavalry and 6000 Macedonians, who were left in Ecbatan. Alexander himself with the rest of the army pursued Darius; and the 11th day arrived at Rhages, having marched in that time 3300 furlongs. Most of those who accompanied him died through fatigue; inasmuch that, on his arrival at Rhages, he could scarce muster 60 horsemen. Finding that he could not come up with Darius, who had passed the Caspian straits, he staid five days at Rhages, to refresh his army and settle the affairs of Media. Thence he marched into Parthia, and encamped near the Caspian straits, which he passed next day without opposition. He had scarce entered Parthia, when he was informed that Bessus and Nabarzanes had conspired against Darius, and designed to seize him. Hereupon, leaving the main body of the army with Craterus, he advanced with a small troop of horse, and having marched day and night, he came on the 3d day to a village where Bessus with his Bactrians had encamped the day before. Here he learned, that Darius had been seized by the traitors; that Bessus had caused him to be shut up in a close cart, and that the whole army, except Artabazus and the Greeks, obeyed Bessus. Alexander at last came in sight of the barbarians, who were marching in great confusion. His unexpected appearance struck them, though far superior in number, with such terror, that they immediately fled; and because Darius refused to follow them, Bessus, and those who were about him, discharged their darts at the unfortunate prince, leaving him wallowing in his blood. After this they all fled different ways, and were pursued with great slaughter by the Macedonians. In the mean time the horses that drew the cart in which Darius was, stopped; for the drivers had been killed by Bessus, near a village about four furlongs from the highway. Thither Polystratus, a Macedonian, being pressed with thirst, was directed by the inhabitants to a fountain to refresh himself, near the place where they stopped. As he was filling his helmet with water, he heard the groans of a dying man; and looking round him, discovered a cart with a team of horses, unable to move by the many wounds they had received. When he drew near, he perceived Darius lying in the cart

having

having several darts sticking in his body. He had strength enough left to call for some water, which Polystratus brought him. Darius, after drinking, turned to the Macedonian, and with a faint voice told him, that, in the deplorable state to which he was reduced, it was no small comfort to him that his last words would not be lost; he then charged him to return his hearty thanks to Alexander for the kindness he had shown to his wife and family, and to acquaint him, that, with his last breath, he besought the gods to prosper him in all his undertakings, and make him sole monarch of the universe. He added, that it did not so much concern him as Alexander to pursue and bring to condign punishment those traitors who had treated their lawful sovereign with such cruelty, that being the common cause of all crowned heads. Then, taking Polystratus by the hand, "Give Alexander your hand, says he, as I give you mine, and carry him, in my name, the only pledge I am able to give, in this condition, of my gratitude and affection." Having uttered these words, he expired in the arms of Polystratus. Alexander coming up a few minutes after, bewailed his death, and caused his body to be interred with the highest honours. The traitor Bessus being at last reduced to extreme difficulties, was delivered up by his own men, naked and bound, into the hands of the Macedonians; on which Alexander gave him to Oxyathres the brother of Darius, to suffer what punishment he should think proper. Plutarch tells us that he was executed in the following manner: Several trees being by main force bent down to the ground, and one of the traitor's limbs tied to each of them, the trees, as they were suffered to return to their natural position, flew back with such violence, that each carried with it the limb that was tied to it. Thus ended the empire of Persia, 209 years after it had been founded by Cyrus.

(15.) PERSIA, HISTORY OF, TILL THE RESTORATION OF ITS MONARCHY BY ARTAXARES. After the death of Alexander, the Persian dominions became subject to Seleucus Nicator, and continued subject to him and his successors, for 62 years, when the Parthians revolted, and conquered the greatest part of them. To the Parthians they continued subject for 475 years, when the sovereignty was again restored to the Persians, as related under PARTHIA, § 13. The restorer of the Persian monarchy was Artaxerxes, or Artaxares, who was not only a private person, but of spurious birth. However, he possessed great abilities, by which means he executed his ambitious projects. He took the pompous title of *king of kings*, and formed a design of restoring the empire to its ancient glory. He therefore gave notice to the Roman governors of the provinces bordering on his dominions, that he had a just right, as the successor of Cyrus, to all the Lesser Asia; which he commanded them immediately to quit, as well as the provinces on the frontiers of the ancient Parthian kingdom, which were already his. The consequence of this was a war with Alexander Severus the Roman emperor. Concerning the event of this war there are very different accounts. It is certain, however, that, on account

of his exploits against Artaxares, Alexander took the titles of *Parthicus* and *Perficus*; though it would seem, with no great reason, as the Persian monarch lost none of his dominions, and his successors were equally ready with himself to invade the Roman territories.

(16.) PERSIA, HISTORY OF, TILL THE SECOND OVERTHROW OF ITS EMPIRE, BY THE SARACENS. Artaxares dying after a reign of twelve or fifteen years, was succeeded by his son Sapor; a prince of great abilities both of body and mind, but fierce, haughty, untractable, and cruel. He was no sooner seated on the throne, than he began a new war with the Romans. In the beginning he was unsuccessful, being obliged by Gordian to withdraw from the Roman dominions, and was even invaded in his turn; but, in a short time, Gordian being murdered by Philip, the new emperor made peace with him upon terms very advantageous to the Persians. He was no sooner gone than Sapor renewed his incursions, and made such alarming progress, that the emperor Valerian, at the age of 70, marched against him in person with a numerous army. An engagement ensued, in which the Romans were defeated, and Valerian taken prisoner. Sapor pursued his advantages with such cruelty, that the people of the provinces took arms, first under Callistus a Roman general, and then under Odenatus prince of Palmyrene. Thus they not only protected themselves from the insults of the Persians, but even gained many great victories over them, and drove Sapor with disgrace into his own dominions. In his march he is said to have made use of the bodies of his unfortunate prisoners to fill up the hollow roads, and to facilitate the passage of his carriages over such rivers as lay in his way. On his return to Persia, he was solicited by the kings of the Cadusians, Armenians, Bactrians, and other nations, to set Valerian at liberty; but to no purpose. On the contrary, he used him the worse; treated him daily with indignities, set his foot upon his neck when he mounted his horse; flayed him alive after some years confinement; and caused his skin to be tanned, which he kept as a monument of his victory over the Romans. This extreme insolence and cruelty was followed by an uninterrupted course of misfortune. Odenatus defeated him in every engagement, and even seemed ready to overthrow his empire; and after him Aurelian took ample vengeance for the captivity of Valerian. Sapor died A. D. 273, after having reigned 31 years; and was succeeded by his son Hormisdas, and he by Varanes I. The former reigned a year and ten days, and the latter 3 years; after which he set the crown to Varanes II. who seems to have been so much awed by the power of the Romans, that he durst undertake nothing. The rest of the Persian history to the overthrow of the empire by the Saracens, affords nothing but an account of their continued invasions of the Roman empire, which more properly belongs to the history of ROME and CONSTANTINOPLE, and to which we therefore refer. The last of the Persian monarchs, of the line of Artaxares, was Isdigerdes, or Isdegerd, who was cotemporary with Omar, the second caliph after Mahomet. He was scarce seated

seated on the throne, when he found himself attacked by a powerful army of Saracens under the command of one Sad, who invaded the country through Chaldaea. The Persian general took all imaginable pains to harass the Arabs on their march; and having an army superior to them in numbers, employed them continually in skirmishes. But Sad, perceiving that this lingering war would destroy his army, determined to force the enemy to a general engagement; and which he at last accomplished with complete success, after a battle that lasted 3 days and 3 nights. And thus the capital, and the greatest part of the dominions of Persia, fell into the hands of the Arabs; along with the king's treasures, which were immense; A. D. 643.

(17.) PERSIA, HISTORY OF, TO ITS CONQUEST BY JENGHIZ KHAN. After this battle, Jezdegerd retired into Chorasian, where he reigned as king, over it and two other provinces, viz. *Kerman* and *Segehan*. But after he had reigned in this limited manner for 19 years, the governor of Merou betrayed it to the Turks. Jezdegerd immediately marched against the rebels and their allies, but was defeated; and having with much difficulty reached the river, while the ferryman was higgling about his fare of 5 farthings, a party of the rebel horse came up, and knowing Jezdegerd, killed him, in 652. Jezdegerd left behind him a son named *Fiروز*, and a daughter named *Dara*. The latter espoused Bostenay, whom the rabbinical writers entitle the *head of the captivity*; and who, in fact, was the prince of the Jews settled in Chaldaea. As for *Fiروز*, he still preserved a little principality; and when he died, left a daughter named *Mah Afria*, who married Walid the son of the caliph Abdalmalek; by whom she had a son named *Yezid*, who became caliph, and sovereign of Persia; and who claiming the title derived from his mother, constantly styled himself the son of *Khefrou* king of Persia, the descendant of caliph Marwan, and among whose ancestors on the side of the mother were the Roman emperor and the *khasan*. Persia continued to be subject to the Arabs till the decline of the Saracen empire; being governed by deputies, entitled *Sultans*, under the Grand Khalifs. In process of time, the sultans of Persia, Babylon, &c. quarrelled among themselves, and occasioned several revolutions, and fluctuations of power, the consequence of which was the coming in of the Turks. TANGROLOIX, their leader, conquered the sultan of Persia, in 1030, and assumed the government. He was succeeded by a race of Turkish princes for about 100 years; when the Tartars invaded Persia, drove out the Turks, and a new dynasty of Tartarian princes succeeded: after which it was seized by various usurpers, till the time of Jenghiz Khan, who conquered it, with almost all the rest of Asia.

(18.) PERSIA, HISTORY OF, TO ITS CONQUEST BY TAMERLANE. After the death of Jenghiz Khan, which happened in 1227, Persia and the neighbouring countries were governed by officers appointed by his successors, who reigned at Keraorum, in the eastern parts of Tartary, till 1253, when it became once more the seat of a mighty empire, under *Hasan*, or *Hulaku* the Mogul, who, in 1256, abolished the Khalifat, by taking Bag-

dad. (See BAGDAD, § 3.) After the death of *Hulaku*, his son *Abaka* succeeded to his extensive dominions; who, in the very beginning of his reign, was invaded by *Barkan Khan*, of the race of *Jagatay* the son of *Jenghiz Khan*, from Great Bukharia, with an army of 300,000 men; but, happily for *Abaka*, *Barkan* died before the armies came to an engagement, upon which the invaders returned to Tartary. In 1264, Armenia and Anatolia were ravaged by the Mamelukes from Egypt, but they were obliged to fly from *Abaka*; who thus seemed to be established in an empire almost as extensive as that of the ancient Persian kings. But in 1268 his dominions were invaded by *Borak Khan*, another descendant of *Jagatay*, with an army of 100,000 men. He quickly reduced the province of Chorasian, and in 1269 advanced as far as *Arderbijan*, where *Abaka* had the bulk of his forces. A bloody battle ensued, in which *Abaka* was victorious, and *Borak* obliged to fly into Tartary, with the loss of all his baggage and great part of his army. *Abaka* died in 1282, after a reign of 17 years, and was succeeded by his brother *Achmed Khan*. He was the first of the family of *Jenghiz Khan* who embraced Mahometanism; but neither he nor his successors appear to have been much versed in the arts of government; for the Persian history, from this period, becomes only an account of insurrections, murders, rebellions, and poisonings, till the year 1337; when, upon the death of *Abufaid*, it split to pieces, and was possessed by a great number of petty princes; all of whom were at perpetual war with each other till the time of *Timur Beg*, or *Tamerlane*, who once more reduced them all under one jurisdiction, about A. D. 1400.

(19.) PERSIA, HISTORY OF, TO ITS CONQUEST BY THE SHEYKH, ISMAEL SOPHI. After the death of *Tamerlane*, Persia continued to be governed by his son *Shah Rukh*, or *Mirza*, a wife and valiant prince; but it did not remain in *Tamerlane's* family above 6 short reigns; for after continual dissensions among themselves, the last of them was defeated and slain in 1479, by *USUM CASSAN*, an Armenian prince, who founded the Armenian dynasty. There were five princes of this line; after which it fell into confusion, being held by a great number of petty tyrants, till the beginning of the 16th century, when it was conquered by *Shah Ismael Sefi*, Sufi or Sophi; whose father was *Sheykh Hayder*, who was the 19th in a direct line from *Ali* the son-in-law of *Mahomet*. When *Tamerlane* returned from the defeat of *Bajazet* the Turkish sultan, he carried with him a great number of captives out of *Karamania* and *Anatolia*, intending to put them to death; and with this intent he entered *Ardebil*, a city of *Arderbijan*, 25 miles E. of *Taurus*, where he continued for some days. At this time lived in that city the *Sheykh Sefi*, reputed by the inhabitants to be a saint; and, as such, much revered by them. From the fame of his sanctity, *Tamerlane* paid him frequent visits; and, when he was about to depart, promised to grant whatever favour he should ask. *Sefi* requested that he would spare the lives of his captives. *Tamerlane* granted his request, upon which the *Sheykh* furnished them with clothes and other necessities, and sent them home to their respective countries.

countries. The people were so much affected with this extraordinary instance of virtue, that they repaired in great numbers to Sefi, bringing with them considerable presents. Thus the descendants of the Sheykh made a conspicuous figure till 1486, when they were all destroyed by the Turkmans except Ismael, who fled to Ghilan, where he lived for some time under the protection of the king of that country. There was at that time, among the Mahometans, a vast number of people dispersed over Asia; and among these a party who followed Hayder, the father of Ismael. Ismael, finding that Persia was all in confusion, and hearing that there was a great number of the Hayderian sect in Karamania, removed thither, and collected 7000 of his party, all devoted to the interest of his family; by whose aid he conquered Shirwan. After this he pursued his conquests; and as his antagonists never united to oppose him, had conquered the greatest part of Persia, and reduced the city of Bagdad in 1510. But in 1511, he received a great defeat from Selim I. who took Tauris, and would probably have crushed the empire of Ismael Sophi in its infancy, had he not thought the conquest of Egypt more important.

(20.) PERSIA, HISTORY OF, TO THE DEATH OF SHAH ABBAS THE GREAT. Ismael died in 1523, leaving the crown to his eldest son Thamasp I. who was a man of very limited abilities, and was therefore invaded by the Turks on his accession to the throne. However, they were obliged to retreat by an inundation, which overflowed their camp. Thamasp, however, reduced Georgia to a province of the Persian empire, which had previously been divided among a number of petty princes. The reigns of the succeeding princes added nothing remarkable till the time of Shah Abbas I. surnamed the Great. He ascended the throne in 1584; and began with declaring war against the Tartars, who had seized the finest part of Chorassan. Having raised a powerful army, he entered that province, where he was met by Abdallah Khan, the chief of the Usbeck Tartars, whom he attacked and defeated, and forced to abandon Chorassan. Here he continued 3 years; and on leaving Chorassan, fixed the seat of government at ISPAHAN, where it has continued ever since. His next expedition was against the Turks, from whom he took the city of TAURIS, after defeating the garrison; on which most of the other adjacent places submitted. One city only, called *Orumi*, being very strongly situated, resisted all the efforts of Abbas; but was at last taken by the assistance of the Curds, whom he gained over by promising to share the plunder with them. But instead of this, he invited their chiefs to dine with him; and having brought them to a tent, the entrance to which had several turnings, he stationed on the inside two executioners, who cut off the heads of the guests as soon as they entered. After this barbarous piece of treachery, Abbas considerably enlarged his dominions, and repelled two dangerous invasions of the Turks. He attempted also to promote commerce, and civilize his subjects; but stained all his great actions by his abominable cruelties. He took the isle of Ormus from the Portuguese, who had kept it since 1507,

by the assistance of some English ships in 1622; and died six years after, aged 70.

(21.) PERSIA, HISTORY OF, TO THE DEATH OF SHAH NADIR. The princes who succeeded Abbas were remarkable only for their cruelties and debaucheries, which occasioned a revolution in 1716, when Shah Hussein was dethroned by the AFGHANS or *Pattans* (see PATTANS); who being oppressed by the ministers, revolted, under the conduct of one Mereweis. The princes of the Afghan race enjoyed the sovereignty only 16 years, when Ashraff, the reigning shah, was dethroned by one of his officers. On this, Thamasp, otherwise called THAMAS, the only survivor of the family of Abbas, assembling an army, invited into his service Nadir Khan, who had obtained great reputation for his valour and conduct. No sooner had Nadir Khan got the command of the Persian army, than he attacked and defeated the usurper Esraff, put him to death, and recovered all the places the Turks and Russians had taken during the rebellion; and then prince Thamas seemed to be established on the throne: but Nadir, to whom Thamas had given the name of *Thamas Kouli*, that is, *the Slave of Thamas* (see KOULI), thinking his services not sufficiently rewarded, and pretending that the king had a design against his life, conspired against his sovereign, put him to death, and usurped the throne, styling himself *Shah Nadir*. He afterwards laid siege to Candahar, of which a son of Mereweis had possessed himself. While he lay at this siege, the court of the Great Mogul being distracted with factions, one of the parties invited Shah Nadir to come to their assistance, and betrayed the Mogul into his hands. He thereupon marched to Delhi, the capital of India, and summoned all the viceroys and governors of provinces to attend him, and bring with them all the treasures they could raise; and those that did not bring as much as he expected, he tortured and put to death. (See DELHI, § 2; and INDIA, § 12, 13.) Having thus amassed the greatest treasure that ever prince was master of, he returned to Persia, giving the Mogul his liberty, on condition of his resigning the provinces on the W. side of the Indus to Persia. He afterwards made a conquest of Usbeck Tartary, and plundered Bochara, the capital. Then he marched against the Dagistan Tartars; but lost great part of his army in their mountains, without fighting. He defeated the Turks in several engagements; but laying siege to Bagdad, was twice compelled to raise it. He proceeded to change the religion of Persia to that of Omar, hanged up the chief priests, put his own son to death, and was guilty of such cruelty, that he was at length assassinated by his own relations in 1747.

(22.) PERSIA, HISTORY OF, TO THE DEATH OF VAKEL KERIM KHAN. Upon the death of Shah Nadir, a contest ensued among his relations for the crown, which rendered Persia a scene of the most horrible confusion for upwards of 40 years. The reader will form some notion of the troubles of this unhappy country, from the following series of pretenders to the throne, between the death of Nadir and the accession of Kerim Khan (from *Franklin's Observations*): Their reigns, or more properly the length of time they respectively governed

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reigned with their party, were as follows: 1. Adil Shah, 9 months. 2. Ibrahim Shah, 6 months. 3. Shah Rokh Shah, after a variety of revolutions, at length regained the city of Meshid: he was alive in 1787, and above 80 years of age, reigning in Kuorasan, under the direction of his son Nussir Ullah Meerza. 4. Suleman Shah, and 5. Ismael Shah, in about 40 days were both cut off, almost as soon as they were elevated. 6. Azad Khan Afghan, one of Kerim Khan's most formidable rivals and competitors, was subdued by him, brought prisoner to Shirauz, and died there a natural death. 7. Hussun Khan Kejar, another of Kerim Khan's competitors, was besieging Shirauz, when his army suddenly mutinied and deserted him. The mutiny was attributed to their want of pay. A party sent by Kerim Khan took him prisoner. His head was instantly cut off, and presented to Kerim Khan. His family were brought captives to Shirauz. They were well treated, and had their liberty given them soon after, under an obligation not to quit the city. 8. Ali Merdan Khan was killed by a musket shot as he was walking on the ramparts of Meshid encouraging his men. 9. Kerim Khan Zund, by birth a Kurdistan, was a favourite officer of Nadir Shah, and at the time of his death was in the southern provinces. Shirauz and other places had declared for him. After various encounters, he completely subdued all his rivals, and finally established himself as ruler of all Persia. He was in power about 30 years; the latter part of which he governed Persia under the appellation of *vakeel* or *regent*, for he never would take the title of *shah*. He made Shirauz the chief city of his residence, in gratitude for the assistance he had received from its inhabitants and those of the southern provinces. He died in 1779, regretted by all his subjects, who esteemed and honoured him as the glory of Persia.

(12.) PERSIA, HISTORY OF, TO THE DEATH OF ZIKEA KHAN. When the death of Kerim Khan was announced in the city, much confusion arose: 22 principal officers of the army, men of high rank, took possession of the citadel, with a resolution to acknowledge Abul Futtah Khan (the eldest son of the late Vakeel) as their sovereign, and to defend him against all other pretenders; whereupon Zikea Khan, a relation of the late Vakeel by the mother's side, who was possessed of immense wealth, enlisted a great part of the army into his pay, by giving them very considerable bounties. Zikea Khan was of the tribe of Zund (or the Lackeries), a man remarkably proud, cruel, and unrelenting. Having assembled a large body of troops, he marched to the citadel, and laid close siege to it for 3 days; at the expiration of which, finding he could not take it by force, he had recourse to treachery. To each of the principal khans he sent a written paper, by which he swore upon the Koran, that if they would come out and submit to him, not a hair of their heads should be touched, and that they should have their effects secured to them. Upon this a consultation was held by them; and as they could not submit many days longer, they agreed to surrender, relying on Zikea's promises. Zikea, in the mean time, gave private orders for the khans to be seized, and brought separately before him as they came out of

the citadel. His orders were strictly obeyed, and these deluded men were all massacred in his presence. Zikea Khan's tyranny became soon intolerable, and he was cut off by his own body-guard, when Abul Futtah Khan, who was then in the camp, was proclaimed king by the unanimous voice of the troops, whom he immediately led back to Shirauz. On his arrival he was acknowledged as sovereign by all ranks of people, and took quiet possession of the government.

(24.) PERSIA, HISTORY OF, UNTIL 1788. Mahomed Sadick Khan, only brother of the late Kerim Khan, who had during that prince's life filled the high office of beglerbeg of Fars, and had been appointed guardian of his son Abul Futtah Khan, was at this period governor of Buffora, which had been taken by the Persians, previous to the vakeel's death. Upon hearing of his brother's decease, he began to form schemes for the destruction of his nephew; but as it was necessary for him to be on the spot, he withdrew the Persian garrison from Buffora, who were all devoted to his interest; evacuated the place, and marched immediately for Shirauz. The news of Sadick Khan's approach threw the inhabitants of Shirauz into the greatest consternation: their minds were variously agitated on the occasion; some, from his public character, expected he would fulfil the commands of his deceased brother; others expected he would set up for himself, which proved to be the case; for having entered Shirauz a very few days after, he caused Abul Futtah Khan to be deprived of sight, and put into close confinement. After this, Sadick Khan openly assumed the government. As soon as the intelligence reached Ali Murad Khan, who was at Ispahan, that lord instantly rebelled; deeming himself to have an equal right to the government with Sadick Khan, as in fact he had. Persia was thus again involved in all the horrors of a civil war. Ali Murad Khan indeed took possession of Shirauz, assumed the government, and gave to the empire the flattering prospect of being settled under the government of one man; but this prospect was soon obscured by the power and credit acquired by Akau Mahomed Khan. On the night following Kerim Khan's death, this man found means to make his escape from Shirauz, and fled to the northward, where, collecting some troops, he soon made himself master of Mazandaran and Ghilan, and was proclaimed nearly about the time that Ali Murad Khan had taken Shirauz. "It is remarkable (says our author), that from his first entering into competition for the government, he has been successful in every battle which he has fought. He is an eunuch, having been made so whilst an infant, by the command of Nadir Shah, but possesses great personal bravery." Ali Murad Khan, hearing of the success of Akau Mahomed Khan, determined to go against him; but as he was previously proceeding to Ispahan to suppress a rebellion, he fell suddenly from his horse and expired. At this period Jaafar Khan, the eldest and only surviving son of Sadick Khan, was governor of Khums: he deemed this a favourable opportunity to assert his pretensions to the government, and immediately marched with what few troops he had to Ispahan: soon after his arrival he was joined by the greater part of the malcontents who were

were then in arms. In this situation he remained some time; but Akau Mahomet Khan coming down upon him with his army, he was obliged to risk his fate in a battle, and, being defeated, fled with the remains of his troops, to Shirauz. Soon after he ventured a second engagement with his opponents Akau Mahomet Khan; and for this purpose marched with his army towards Isfahan: the two armies met near Yezdekhaft; when a battle ensued; and Akau Mahomet Khan's superior fortune again prevailing, Jassar Khan was defeated; and retired to Shirauz, which he quitted on the 25th of June 1787, and shortly after marched his army to the northward, but returned in October without having effected any thing." Such was the state of Persia in 1788. Mr Francklin, from whose excellent *Observations on a Tour made in the years 1786-7* these particulars are mostly extracted, says that Jassar Khan is the most "likely, in case of success against his opponent, to restore the country to a happy and reputable state; but it will require a long time to recover it from the calamities into which the different revolutions have brought it:—a country, if an oriental metaphor may be allowed, once blooming as the garden of Eden, fair and flourishing to the eye;—Now, sad reverse! despoiled and leafless by the cruel ravages of war, and desolating contention.

(25.) PERSIA, ISLANDS OF. In his voyage from Gorboun up the Persian Gulph, Mr Ives makes mention of several islands, named Kisme, Polloar, Kyes, Inderahie, Shittewar, and Busheel. Some of these were quite barren; on others there were a few trees and bushes, with little fishing towns, and a few small vessels lying along shore. The date trees were thinly scattered among the hills; and such was the barrenness of these islands that it was a matter of surprise how sheep and goats could subsist upon them, till it was found, that the soil produced a kind of small-leaved juicy mallows, on which these animals feed. The Persian coast affords a most romantic prospect. Narban point terminates in a long and low piece of land, which runs off into the gulph from the foot of the Persian hills. Between this point and the main land is a channel, in which a ship of 900 tons burden might easily ride. Through all the Persian Gulph, Mr Ives remarks, that the spring water on the islands is much better than that on the continent. At the island called Baharen, divers go down to the bottom of the sea, at certain known depths, and come up again with their vessels filled with fresh water. This fresh water is found in holes or little natural wells, some fathoms below the surface of the sea. The Arabs have certain marks on the island to teach them where to dive for the fresh water.

(26.) PERSIA, MANNERS OF THE PEOPLE OF. The ancient Persians are known to have been exceedingly voluptuous and effeminate. After the conquest of the empire by Alexander, the Greek discipline and martial spirit being in part communicated to them, they became much more formidable; and hence the Parthians were a match, not only for the Syro-Macedonian princes, but even for the Romans. Of their manners we know little or nothing, but that to their valour and military skill they joined in a surprising degree all the luxu-

ry and dissipation of the ancient Persians. The modern Persians, like the Turks, plundering all the adjacent nations for beauties to breed by, are men of a good stature, shape, and complexion; but the Gaures, or ancient Persians, are homely, ill-shaped and clumsy, with a rough skin, and olive complexions. In some provinces not only the complexions, but the constitutions of the inhabitants suffer greatly by the extreme heat of the climate. The Persian women are generally handsome and well-shaped but much inferior to those of Georgia and Circassia. The men wear large turbans on their heads, some of them very rich, interwoven with gold and silver; a vest, girt with a sash; and over it a loose garment, something shorter; with sandals, or slippers, on their feet. When they ride, which they do every day, they wear pliant boots of yellow leather; the furniture of their horses is extremely rich, and the stirrups generally of silver: whether on horseback or on foot they wear a broad sword and a dagger in their girth. The dress of the women does not differ much from that of the men; only their vests are longer, and they wear stiffened caps on their heads, and their hair down. With respect to outward behaviour, says an intelligent traveller, "The Persians are certainly the Parisians of the East. Whilst a rude and insolent demeanor peculiarly marks the character of the Turkish nation towards foreigners and Christians, the behaviour of the Persians would, on the contrary, do honour to the most civilized nations: they are kind, courteous, civil, and obliging. Their usual drink, is water and sherbet, as in other Mahometan countries, wine being prohibited; but of all Mahometan nations, they pay the least regard to this prohibition. Many of them drink wine publicly, and almost all of them in private (excepting those who have performed the pilgrimage to Mecca, and men of religion): they are also very liable to be quarrelsome when inebriated, which is often attended with fatal consequences. They eat opium, but in much less quantities than the Turks; and indeed in every thing they say or do, eat or drink, they make a point to be as different from this nation as possible, whom they detest beyond measure; esteeming Jews and Christians superior to them, and much nearer to salvation. They are of the sect of Ali; whom they venerate to a high degree of blasphemy, and exalt even above the Almighty himself.

(27.) PERSIA, MARRIAGE LAWS IN. The most remarkable law among the Persians respects marriage. A man may divorce his wife when he chooses, without assigning any other reason for the divorce than that it is his pleasure. If he should change his mind, he may again marry her, divorce her a second time, and a third time marry her; but here this privilege stops. No man is allowed to marry the woman whom he has thrice divorced. A widow is obliged to mourn four months for her deceased husband before she can be married to another; but a concubine may form a new connection the instant that her keeper expires.

(28.) PERSIA, METALS AND OTHER MINERALS IN. Metals of all sorts have been found in Persia. Since the reign of Abbas the Great, iron, copper, and lead have been very common; but there are

no gold or silver mines open. There are silver mines in Kerman and Mezanderan, and one near Spauhawn; but they cannot be worked for want of wood. Sulphur, saltpetre, salt, and alum are found in plenty. Plains, sometimes 10 leagues in length, are covered entirely with salt, and others with sulphur or alum. In some places salt is dug out of mines. Marble, freestone, and slate, are found in great plenty about Hamadan. The marble is of 4 colours, viz. white, black, red and black, and white and black. Perfa yields both black and white petroleum. Near Tauris they find azure. And there are several rocks or mines of turquoises.

(29.) PERSIA, MOUNTAINS OF. There is perhaps no country in the world which, generally speaking, is more mountainous than Persia; but many of them have neither springs, nor metals, and but few are shaded with trees. Some of the chief of them are situated on the frontiers, and serve as a kind of natural ramparts to this vast empire. Among the latter are the mountains of Caucasus and Ararat, sometimes called the *mountains of Daghestan* which fill all the space between the Euxine and Caspian seas: those called *Taurus*, and the several branches thereof, run through Persia from Natolia to India, and fill all the middle of the country.

(30.) PERSIA, PROVINCES OF. Persia is divided into 11 provinces; viz. 1. Shirvan; 2. Adirbeit-zan; 3. Ghilan; 4. Mezanderan and Taberistan; 5. Persian Irak, or ancient Parthia; 6. Chusistan; 7. Faristan; 8. Kerman, or Keristan; 9. Meccran, or Makran; 10. Segestan; and 11. Sablestan, or Zablestan, and Chorasán, including Asterabat and Daghestan. (See these articles.) Candahar was anciently a province of Persia, but is now independent.

(31.) PERSIA, QUADRUPEDS, INSECTS, AND BIRDS OF. The horses of Persia are the most beautiful of the East, though they are not so much esteemed as those of Arabia; so great however, is the demand, that the finest ones will fetch from 90l. to 450l. sterling. They are higher than the English saddle horses; straight before, with a small head, legs wonderfully slender, and finely proportioned; they are gentle travellers, very light and sprightly, and are of service till they are 18 or 20 years old. The great numbers of them sold into Turkey and the Indies, though none can be carried out of the kingdom without licence from the king, makes them dear. Asses are of two sorts; the first bred in Persia, heavy and doltish; the other originally of an Arabian breed, the most docile and useful creatures in the world. They are used wholly for the saddle, being very sure-footed, carrying their heads lofty, and moving gracefully. Some of them are valued at 50l. ster. The mules here are also very fine; they pace well, never fall, and are seldom tired. The highest price for a mule is about 45l. Camels are also numerous in Persia, and very servicable: they call them *kechty krouch konion*, i. e. *the ships of the land*; because the inland trade is carried on by them as the foreign is by ships. Of these camels there are two sorts, the northern and southern; the latter, which is much the smaller but swifter, will carry a load of above 700 weight, and trot as fast as a horse will

gallop; the other will travel with a load of 1200 or 1300 weight; both are profitable, costing little or nothing to keep. They travel without halter or reins; grazing on the road, notwithstanding their load. They are managed entirely by the voice; those who direct them fingering, and the camel moving brisker or slower, as they keep a quicker or slower time. The camels shed their hair clean in spring. Camels hair is the most profitable fleece of all the tame beasts: fine stuffs are made of it; and in Europe, hats, with a mixture of a little beaver. As beef is little eaten in Persia, their oxen are generally employed in ploughing and other labour. Hogs are nowhere bred in Persia, if we except a province or two on the border of the Caspian Sea. Sheep and deer are very common. Of wild beasts, the number is not great because there are few forests; but where there are any, as in Hyrcania, now called TABERISTAN, great numbers of lions, bears, tigers, leopards, porcupines, wild boars, and wolves, are found. There are but few insects, owing to the dryness of the climate. But in some provinces, there is a vast number of locusts, which fly about in such clouds as to darken the air. In certain places they have large black scorpions, so venomous, that such as are stung by them die in a few hours. In others they have lizards frightfully ugly, which are an ell long, and as thick as a large toad, their skins being as hard and tough as that of the sea-dog. The southern provinces are infested with gnats; some with long legs, some white, and as small as fleas, which make no buzzing, but sting suddenly and smartly, like needles. Among the reptiles is a long square worm, called by the inhabitants *baxar-py*, i. e. *thousand feet*, because its whole body is covered with feet; it runs prodigiously fast; and its bite is dangerous, and even mortal, if it gets into the ear. There are in Persia all the sorts of fowls we have in Europe. Wild and tame pigeons are kept in vast numbers all over the kingdom, chiefly on account of their dung. They have pigeons so taught, that, flying in one flock, they surround wild ones, and bring them with them to their masters. The partridges are the largest and finest in the world, being generally of the size of our fowls. Geese, ducks, cranes, herons, and many other sorts of water fowls, are common; nightingales are heard all the year, but chiefly in spring; martlets learn whatever words are taught them; and a bird called *noura*, chatters incessantly, and repeats whatever it hears. Of birds of a larger size, the most remarkable is the pelican, by the Persians called *tacab*, i. e. *water-carrier*; and *mife*, i. e. *sheep*; because it is as large as one of those animals. (See PELICANUS.) There are in Persia various birds of prey. Some of their falcons are the largest and finest in the world; the Persian lords are great lovers of falconry, and the king has generally 800 of them, each of which has a person to attend it.

(32.) PERSIA, RIVERS OF. Except the ARAXES, which rises in the mountains of Armenia, and falls into the Kur or Cyrus before it reaches the Caspian Sea, there is not one navigable stream in this country. The Oxus divides Persia on the NE. from Usbeck Tartary. The Indus also may be reckoned among the rivers of Persia, as the provinces

vinces W. of that river are now in possession of that crown: It runs a course of more than 1000 miles, and overflows all the low grounds in April, May, and June.

(33.) PERSIA, SEAS AND FISH OF. The seas on the S. of Persia are, the Gulph of Persia or Bassora, the Gulph of Ormus, and the Indian Ocean. The only sea on the N. is the Caspian, or Hyrcanian sea; which is more properly a lake, having no communication with any other sea. These seas together with the lakes and rivers, supply Persia with plenty of fish. The Persian Gulph is believed to have more fish than any other sea in the world. On the coasts of this gulph is taken a sort of fish, whose flesh is of a red colour, very delicious, and some of them weigh 300 or 300lb. The river fish are chiefly barbel. Those of the lakes are carps and shads. In the river Spahawn are a great number of crabs, which crawl up the trees and live under the leaves, whence they are taken; and are esteemed very delicious.

(34.) PERSIA, SOIL AND PRODUCE OF. The soil of Persia is in general stony, sandy, barren, and everywhere so dry, that, if it be not watered, it produces nothing, not even grass; but, where they can turn the water into their plains and valleys, it is not unfruitful. There is a great difference of fertility in the various provinces; those of Media, Iberia, Hyrcania, and Bactria, are now in a great measure what they were formerly, and surpass most of the others in their productions. All along the Persian Gulph, the soil is barren, cattle less numerous; and every thing in a worse condition than any where else. Though there is scarce a province in Persia which does not produce wine, yet the wine of some provinces is much more esteemed than that of others; but that of Shiraz is universally allowed to be the best in Persia. The grain most common there is wheat, which is very fine. As for barley, rice, and millet, they only make bread of them in some places, as in Courdistan, when their wheat bread is exhausted; but rice is the universal aliment; and therefore after they have sown it as other grain, they in 3 months transplant it, root by root, into fields, which are well watered, otherwise it would never attain that perfection which it acquires. Corn ripens exceedingly, so that in some parts they have a threefold crop in the year. The Persian bread is white, and good, and commonly cheap.

(35.) PERSIA, STATE OF SCIENCE IN. The Persians excel more in poetry than any other sort of literature; and astrologers are now in as great reputation as the magi were formerly. Their books are all MSS. the art of printing having not yet been introduced among them: they excel indeed in writing, and have eight different hands. They write from the right hand to the left, as the Arabs do. In their short hand, they use the letters of the alphabet; and the same letters differently pointed, will have 20 different significations. In short, the Persians are born with as good natural parts as any people in the East, but make a bad use of them; being great dissemblers, cheats, liars, and flatterers, and having a strong propensity to voluptuousness, luxury, idleness, and indolence;

vinces indeed to which the Asiatics in general are much addicted.

(36.) PERSIA, TRADE, MANUFACTURES AND MONEY OF. The English, and other nations, trade with the Persians by the gulph of Ormus at Gombroon, and by the way of Turkey. A trade also was not many years since opened by the English with Persia through Russia, and the Caspian Sea; but that is now discontinued, having been prohibited by the court of Russia, who were apprehensive that the English would teach the Persians to build ships, and dispute the navigation of the Caspian Sea with them. The principal commodities and manufactures of Persia, are, raw and wrought silks, mohair camblets, carpets, leather; for which, and some others, the European merchants exchange chiefly woollen manufactures; but the trade is carried on altogether in European shipping, the Persians having scarce any ships of their own, and the Russians having the sole navigation of the Caspian Sea. There is not a more profitable trade in the world, than that which is carried on between Gombroon and Surat; and the English East India company frequently let out their ships to transport the merchandise of the Banians and Armenians from Persia to India. The shah of Persia is the chief merchant; and he usually employs his Armenian subjects to traffic for him in every part of the world. His agents must have the offer of all merchandise, before his subjects are permitted to trade. It is computed that Persia produces yearly upwards of 22,000 bales of silk, chiefly in the provinces of Ghilan and Mezeranderan, each bale weighing 253 pounds. Vast quantities of Persian silk used to be imported into Europe, especially by the Dutch, English, and Russians, before the civil wars began. The goods exported from Persia to India are, tobacco, all sorts of fruits, pickled and preserved, especially dates, marmalade, wines, distilled waters, horses, Persian feathers, and Turkey leather of all sorts and colours, a great quantity whereof is also exported to Muscovy and other European countries. The exports to Turkey are, tobacco, galls, thread, goats hair, stuffs, mats, box-work, and many other things. As there are no ports in the east, and trading by commission, with the use of bills of exchange, is little known, traffic must proceed in a very awkward heavy manner, in comparison of that of Europe. The most current money of Persia is the abassee, worth about 1s. 4d. sterling; they are of the finest silver. An abassee is worth two mahmoudes; a mahmoude, two shahces; and a shahce, ten single or five double casbeghes: these last pieces are of brass, the others of silver; for gold is not current in trade. The shahces are not very common; but mahmoudes and casbeghes are current everywhere. Horses, camels, houses, &c. are generally sold by the toman, which is an imaginary coin, worth 200 shahces, or 50 abassee; and they usually reckon their estates that way. Such a one, they say, is worth so many tomans, as we say pounds in England.

(37.) PERSIA, TROOPS OF, ROYAL TITLES, &c. With respect to the forces of Persia, their two bodies, called the *Korshies* and *Goullans*, that serve on horseback, are well kept and paid, and may

may amount, the former to about 22,000, and the latter to about 18,000. The Kortishes are descended from an ancient but foreign race; and the Goulans are either Georgian renegadoes or slaves, or the children of slaves of all nations. The infantry, called *Tangtchies*, are picked out from among the most robust and vigorous of the peasants, and compose a body of 40,000, or 50,000. The Persians have few fortified towns, and had no ships of war till Kouli Khan built a royal navy, and among them had a man of war of 80 guns; but since the death of that usurper, we hear no more of their fleet. The arms of the king of Persia, are a lion couchant, looking at the sun as he rises over his back. His usual title is *Shaw* or *Patshaw*, the *disposer of kingdoms*. They add also to the king's titles those of *sultan*, and *chan* or *cham*, which is the title of the Tartar sovereigns. To acts of state, the Persian monarch does not subscribe his name; but the grant runs in this manner, viz, *This act, or edict, is given by him whom the universe obeys*.

(1.) **PERSIAN**, *adj.* Of or belonging to Persia.

(2.) **PERSIAN GULF**, or the **GULF OF PERSIA**, a large gulf of Asia, between Persia and Arabia Felix. The entrance near Ormus is not above 30 miles over; but within, it is 180 in breadth; and the length, from Ormus to the mouth of the Euphrates, is 420 miles.

(3.) **PERSIAN WHEEL**. See **HYDROSTATICS**.

PERSIANS, *n. s.* The People of Persia. See **PERSIA**, § 26.

PERSICA, the **PEACH**, is by LINNÆUS referred to the same class and genus with **AMYGDALUS**; however, as they are reckoned different genera, by Tournefort and others, we shall here mention the 3 principal species of the Persica, most remarkable for the beauty of their flowers.

1. **PERSICA AFRICANA**, the double-flowering Dwarf Almond.

2. **PERSICA HUMILIS**, the Dwarf Almond. These two reach not above the height of 3 or 4 feet, though their flowers are of equal beauty with the

3. **PERSICA VULGARIS**, the common PEACH tree, with double flowers. It is a very great ornament in gardens, producing very large double flowers of a beautiful red or purple colour, and growing to a considerable size. Numerous other species of peach trees, with their culture, uses, &c. are described under **AMYGDALUS**, § 1-9.

PERSICARIA, in botany. See **POLYGONUM**, N° 3.

PERSICUM MARE, or } in ancient geography,
PERSICUS SINUS, } a part of the sea which the Romans called *Mare Rubrum*, and the Greeks, *Mare Erythraeum*; washing Arabia Felix on the E. between which and Carmania, entering into the land, it washes Persia on the S. Its large mouth consists of straight sides, like a neck, and then the land retiring equally a vast way, and the sea surrounding it in a large compass of shore, there is exhibited the figure of a human head. (Mela.) Theophrastus calls this bay *Sinus Arabicus*.

PERSIMON. See **DIOSPYROS**, N° 2. From the persimon is made a very palatable liquor in the following manner: As soon as the fruit is ripe, a sufficient quantity is gathered, which is

very easy, as each tree is well stocked with them: These persimon apples are put into a dough of wheat or other flour, formed into cakes; and put into an oven, in which they continue till they are quite baked and sufficiently dry, when they are taken out again: then, in order to brew the liquor, a pot full of water is put on the fire, and some of the cakes are put in: these become soft by degrees as the water grows warm, and crumble in pieces at last; the pot is then taken from the fire, and the water in it well stirred about, that the cakes may mix with it: this is then poured into another vessel, and they continue to steep and break as many cakes as are necessary for a brewing: the malt is then infused, and they proceed as usual with the brewing. Beer thus prepared, is reckoned much preferable to other beer. They likewise make brandy of this fruit in the following manner: having collected a sufficient quantity of persimons in autumn, they are altogether put into a vessel, where they lie for a week till they are quite soft: then they pour water on them, and in that state they are left to ferment of themselves, without any addition. The brandy is then made in the common way, and is said to be very good, especially if grapes (in particular of the sweet sort), which are wild in the woods, be mixed with the persimon fruit. Some persimons are ripe at the end of September, but most of them later, and some not before November and December, when the cold first overcomes their acrimony. The wood of this tree is very good for joiners instruments, such as planes, handles to chisels, &c. but if after being cut down it lies exposed to sunshine and rain, it is the first wood which rots, and in a year's time there is nothing left but what is useless. When the persimon trees get once into a field, they are not easily got out of it again, as they spread greatly.

(1.) **PERSIS**, a Roman lady, whom St Paul salutes in his epistle to the Romans, (xvi. 12.) and calls his beloved sister. She is not honoured by any church, which is something singular.

(2.) **PERSIS**, in ancient geography, a province of Persia, bounded by Media, Carmania, Susiana, and the Persian Gulf. It is used by some authors for Persia itself.

* **To PERSIST**. *v. n.* [*persisto*, Latin, *persistere*, Fr.] To persevere; to continue firm; not to give over.—An immortal soul shall *persist* in being, when time itself shall cease. *South*.—If they *persist* in pointing their batteries against particular persons, no laws of war forbid the making reprisals. *Addison*.

* **PERSISTANCE**. *n. s.* [from *persist*. *Per-*

* **PERSISTENCY**. *s. s.* [from *persist*. *Persistency* seems more proper.] 1. The state of persisting; steadiness; constancy; perseverance in good or bad.—The love of God better can consist with the indeliberate commissions of many sins, than with an allowed *persistency* in any one. *Government of the Tongue*. 2. Obstinacy; obduracy; contumacy.—Thou think'st me as far in the devil's book, as thou and Falstaff, for obduracy and *persistency*. *Shak.*

* **PERSISTIVE**. *adj.* [from *persist*.] Steady; not receding from a purpose; persevering.—

The *persistive* trials of great Jove,
To find *persistive* constancy in man. *Shak.*

PERSIUS

PERSIUS FLACCUS, Aulus, a Latin poet in the reign of Nero, celebrated for his satires. He was born, according to some, at Volterra in Tuscany; and according to others, at Tigulia, in the gulf of Specia, in the year 34. He was educated till 12 years old at Volterra; and afterwards at Rome, under Palæmon the grammarian, Virgilius the rhetorician, and Cornutus the Stoic, who contracted a friendship for him. Persius consulted that illustrious friend in the composition of his verses. Lucian also studied with him under Cornutus; and was so charmed with his verses, that he was incessantly breaking out into acclamations at the beautiful passages in his satires. He was a steady friend, a good son, an affectionate brother and parent. He was chaste, meek, and modest: which shows how wrong it is to judge of a man's morals by his writings; for the satires of Persius are not only licentious, but sharp and acrimonious. Persius was of a weak constitution, and troubled with a weak stomach, which was the cause of his death in the 30th year of his age. Six of his satires remain; in their judgments of which the critics have been much divided, excepting as to their obscurity. Yet his style is grand, figurative, poetical, and suitable to the dignity of the Stoic philosophy: and hence he shines most in recommending virtue.

PERSKENSTEIN, a town of Silesia, in Neisse, 2½ miles NNE of Ottmichau.

PERSO, a town in Friuli; 10 miles NW. of Udina.

(1.) * **PERSON**. *n. f.* [*personne*, Fr. *persona*, Lat.] 1. Individual or particular man or woman.—*A person* is a thinking intelligent being. *Locke*. 2. Man or woman considered as opposed to things, or distinct from them.—*A zeal for persons* is far more easy to be perverted, than a zeal for things. *Spratt*.—To that we owe the safety of our persons and the propriety of our possessions. *Atterbury*. 3. Individual; man or woman.—This was then the church, which was daily increased by the addition of other persons received into it. *Pearson*. 4. Human being; considered with respect to mere corporeal existence.—

'Tis in her heart alone that you must reign;
You'll find her *person* difficult to gain. *Dryden*.
5. Man or woman considered as present, acting or suffering.—

If I am traduc'd by tongues which neither know

My faculties nor *person*;
'Tis but the fate of place. *Shak. Henry VIII*.
—The rebels maintained the fight, and for their persons shewed no want of courage. *Bacon*. 6. A general loose term for a human being; one; a man.—Be a *person's* attainments ever so great, he should always remember, that he is God's creature. *Clarissa*. 7. One's self; not a representative.—Now that I mean to make a war upon France in *person*, I will declare it to you myself. *Bacon*.—Our Saviour in his own *person*, during the time of his humiliation, duly observed the sabbath. *White*.
The king in *person* visits all around. *Dryden*.
8. Exterior appearance.—

For her own *person*,
It beggar'd all description. *Shak*.
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9. Man or woman represented in a fictitious dialogue.—All things are lawful unto me, saith the apostle, speaking in the *person* of the Christian Gentile. *Hooker*.—The fables, Cicero pronounced under the *person* of Crassus. *Baker on Learning*. 10. Character.—From his first appearance upon the stage, in his new *person* of a sycophant or juggler, instead of his former *person* of a prince, he was exposed to the derision of the courtiers and the common people. *Bacon*.—He hath put on the *person* not of a robber and murderer, but of a traitor to the state. *Hayward*. 11. Character of office.—

I then did use the *person* of your father. *Shak*.
—How different is the same man from himself, as he sustains the *person* of a magistrate and that of a friend. *South*. 12. [In grammar.] The quality of the noun that modifies the verb.—He had, with the remembrance of that plight he was in, forgot in speaking of himself the third *person*. *Sidney*.—If speaking of himself in the first *person* singular has so various meanings, his use of the first *person* plural is with greater latitude. *Locke*.

(1.) A **PERSON** is an individual substance of a rational intelligent nature. The word *person*, *persona*, is thought to be borrowed a *personando*, from personating or counterfeiting; and is supposed to have first signified a *mask*: because, as Boethius informs us, in *larva concorva fons volvatur*: and hence the actors who appeared masked on the stage were sometimes called *larvati* and sometimes *personati*. He likewise says, that as the several actors represented each a single individual person, for this reason, other people, who were at the same time distinguished by something in their form, character, &c. whereby they might be known, came likewise to be called by the Latins *personæ*, and by the Greeks *προσωπα*. Again, as actors rarely represented any but great and illustrious characters, the word came at length to import the mind, as being that whose dispositions constitute the character. And thus men, angels, and even God himself, were called *persons*. Things merely corporeal, as a stone, a plant, or a horse, were called *hypostases* or *supposita*, but never *persons*.

(3.) **PERSON**, in grammar, (§ 1, def. 12.) is applied to such nouns or pronouns as, being either prefixed or understood, are the nominatives in all inflections of a verb; or it is the agent or patient in all finite or personal verbs. See **ENGLISH LANGUAGE**.

(4.) **PERSON**, in geography, a new county of N. Carolina, in Hillsborough district. The courthouse and post office are 26 miles N. of Hillsborough, and 34 E. of Caswell.

* **PERSONABLE**. *adj.* [from *person*.] 1. Handsome; graceful; of good appearance.—Were it true that her son Ninias had such a stature, as that Semiramis, who was very *personable*, could be taken for him; yet it is unlikely that she could have held the empire 42 years after by any such subtilty. *Raleigh*. 2. [In law.] One that may maintain any plea in a judicial court. *Ainsl*.

* **PERSONAGE**. *n. f.* [*personage*, Fr.] 1. A considerable person; man or woman of eminence.—These great *personages* thus run one after the other.

other. *Sidney*.—It is not easy to research the actions of eminent *personages*. *Wotton*. 2. Exterior appearance; air; stature.—

She hath urg'd his height,

And with her *personage*, her tall *personage*,
She hath prevail'd with him. *Shak.*

—Lord Sudley was fierce in courage, courtly in fashion, in *personage* stately. *Hayward*. 3. Character assumed.—The Venetians, naturally grave, love to give into the follies of such seasons, when disguised in a false *personage*. *Addison on Italy*. 4. Character represented.—Some persons must be found out, already known by history, whom we may make the actors and *personages* of this fable. *Broom on Epic Poems*.

(*) * **PERSONAL**, *adj.* [*personal*, Fr. *personalis*, Latin.] 1. Belonging to men or women, not to things; not real.—Every man to be termed by way of *personal* difference only. *Hooker*. 2. Affecting individuals or particular people; peculiar; proper to him or her; relating to one's private actions or character.—

I know no *personal* cause to spurn at him.

Shak.

—The words are conditional; if thou dost well, and so *personal* to Cain. *Locke*.—In private conversation the application may be more *personal*. *Rogers*.—If he imagines there may be no *personal* pride in those that are dressed, out with so much glitter of ornament, let him only make the experiment. *Law*. 3. Present; not acting by representative.—

He was *personal* in the Irish war. *Shak.*

—This immediate and *personal* speaking of God Almighty to Abraham, Job, and Moses, made not all his precepts and dictates, delivered in this manner, simply and eternally moral; for some of them were *personal*, and many of them ceremonial and judicial. 4. Exterior; corporal.—A princess, whose *personal* charms were now become the least part of her character. *Addison*. 5. [In law.] Something moveable; something appendant to the person, as money; not real, as land.—

This sin, of kind not *personal*,

But real and hereditary was.

Davies.

6. [In grammar.] A *personal* verb is that which has all the regular modification of the three persons; opposed to impersonal that has only the third.

(2.) **PERSONAL** implies also any thing that concerns, or is restrained to, the person.

(3.) **PERSONAL ACTION**, in law, is an action levied directly, and solely against the person; in opposition to a real or mixed action. See **ACTION**.

(4.) **PERSONAL GOODS, OR CHATTELS**, in law, signifies any moveable thing belonging to a person, whether alive or dead. See **CHATTELS**.

(5.) **PERSONAL IDENTITY**. See **METAPHYSICS**. See XXIII. § 11A.

(6.) **PERSONAL VERB**. See § 1. *def. 6*.

* **PERSONALITY**, *n. f.* [*from personal*.] The existence or individuality of any one.—This *personally* extends itself beyond present existence to what is past, only by consciousness, whereby it imputes to itself past actions. *Locke*.

To **PERSONALIZE**, *v. a.* To change from a thing to a person.

PERSONALIZING, *n. f.* See **PERSONIFYING**.

* **PERSONALLY**, *adv.* [*from personal*.] 1. In person; in presence; not by representative.—Approval they give, who *personally* declare their assent by voice, sign, or act. *Hooker*.—

I could not *personally* deliver to her

What you commanded me.

Shak.

—There are many reasons, why matters of such a wonderful nature should not be taken notice of by those Pagan writers, who lived before our Saviour's disciples had *personally* appeared among them. *Addison*. 2. With respect to an individual; particularly.—She bore a mortal hatred to the house of Lancaster, and *personally* to the king. *Bacon*. 3. With regard to numerical existence.—The converted man is *personally* the same he was before, and is neither born nor created a-new in a proper literal sense. *Rogers*.

PERSONATE, the 40th order in Linnaeus's Fragments of Natural Method, consisting of plants whose flowers are furnished with an irregular gaping or grinning petal, which in figure somewhat resembles the snout of an animal. (See **BOTANY**, *Index*.) Most of the genera of this order are arranged under the class and order didynamia angiospermia. The rest, although they cannot enter into that artificial class and order, for want of the elastic character, the inequality of the stamina; yet, in a natural method, which admits of greater latitude, may be arranged with those plants which they resemble in their habit and general appearance, and particularly in the circumstances expressed in that title.

* To **PERSONATE**, *v. a.* [*from persona*, Lat.] 1. To represent by fictitious or assumed character, so as to pass for the person represented.—The lad was not to *personate* one, that had been long before taken out of his cradle, but a youth that had been brought up in a court. *Bacon*. 2. To represent by action or appearance; to act.—

Herself a while she lays aside, and makes

Ready to *personate* a mortal part.

Craheaw.

3. To pretend hypocritically, with the reciprocal pronoun.—It has been the constant practice of the Jesuits to send over emissaries, with instructions to *personate* themselves members of the several sects amongst us. *Swift*. 4. To counterfeit; to feign. Little in use.—Piety is opposed to that *personated* devotion under which any kind of impiety is disguised. *Hammond*.—Thus have I played with the dogmatist in a *personated* scepticism. *Glauville*. 5. To resemble.—

The lofty cedar *personates* thee.

Shak.

6. To make a representative of, as in picture. Out of use.—

One do I *personate* of Timon's frame.

Shak.

7. To describe. Out of use.—It must be a *personating* of himself; a satire against the softness of prosperity. *Shak.*—By the colour of his beard, the shape of his leg, the manner of his gait, the expression of his eye, forehead and complexion, he shall find himself most feelingly *personated*. *Shak.*

* **PERSONATION**, *n. f.* [*from personate*.] Counterfeiting

Counterfeiting of another person.—This being one of the strangest examples of a *personation* that ever was, it deserveth to be discovered and related at the full. *Baron.*

(1.) **PERSONIFICATION.** *n. f.* [from *personify*.] *Protopopœia*; the change of things to persons: as,

Conjux heard his voice. *Milton.*

(2.) **PERSONIFICATION,** } OR **PERSONALIZING,**
PERSONIFYING, } the giving an inanimate being the figure, sentiments, and language of a person. (See *ORATORY*, § 242.) Dr Blair, in his Lectures on Rhetoric, gives this account of personification. "It is a figure, the use of which is very extensive, and its foundation laid deep in human nature. At first view, and when considered abstractly, it would appear to be a figure of the utmost boldness, and to border on the extravagant and ridiculous. For what can seem more remote from the tract of reasonable thought, than to speak of stones and trees, and fields and rivers, as if they were living creatures, and to attribute to them thought and sensation, affections and actions? One might imagine this to be no more than childish conceit, which no person of taste could relish. In fact, however, the case is very different. No such ridiculous effect is produced by personification when properly employed; on the contrary, it is found to be natural and agreeable, nor is any very uncommon degree of passion required in order to make us relish it. All poetry, even in its most gentle and humble forms, abounds with it. From prose it is far from being excluded; nay, in common conversation, very frequent approaches are made to it. When we

say, the ground *thirsts* for rain, or the earth *smiles* with plenty; when we speak of ambition's being *restless*, or a disease being *deceitful*; such expressions show the facility with which the mind can accommodate the properties of living creatures to things that are inanimate, or to abstract conceptions of its own forming." The Dr goes on to investigate the nature of personification at considerable length. And he adds a very proper caution respecting the use of it in prose compositions, in which this figure requires to be used with great moderation and delicacy. "The same liberty is not allowed to the imagination there as in poetry. The same assistances cannot be obtained for raising passion to its proper height by the force of numbers and the glow of style. However, addresses to inanimate objects are not excluded from prose; but have their place only in the higher species of oratory. A public speaker may on some occasions very properly address religion or virtue; or his native country, or some city or province, which has suffered perhaps great calamities, or has been the scene of some memorable action. But we must remember, that as such addresses are among the highest efforts of eloquence, they should never be attempted unless by persons of more than ordinary genius: for if the orator fails in his design of moving our passions by them, he is sure of being laughed at. Of all frigid things, the most frigid are the awkward and unseasonable attempts sometimes made towards such kinds of personification, especially if they be long continued."

* **To PERSONIFY.** *v. a.* [from *person*.] To change from a thing to a person.

P E R S P E C T I V E.

PERSPECTIVE.

DEFINITIONS.

PERSPECTIVE is thus defined by Dr Johnson, both as a substantive and adjective.

* **PERSPECTIVE.** *n. f.* [*perspectif*, Fr. *perspicio*, Latin.] 1. A glass through which things are viewed.—If it tend to danger they turn about the *perspective*, and shew it so little, that he can scarce discern it. *Denham.*—It may import us in this calm, to hearken to the storms raising abroad and by the best *perspectives*, to discover from what coast they break.—

You hold the glass, but turn the *perspective*, And farther off the less'n'd object drive. *Dryden.*

Faith for reason's glimmering light shall give Her immortal *perspective*. *Prior.*

2. The science by which things are ranged in a picture, according to their appearances in their real situation.—Medals have represented their buildings according to the rules of *perspective*. *Addison.*

3. View; vista.—

Lofly trees, with sacred shades,

And *perspectives* of pleasant glades. *Dryden.*

* **PERSPECTIVE.** *adj.* Relating to the science of vision; optic; optical.—We have *perspective* houses, where we make demonstrations of all lights and radiations.

PERSPECTIVE is also used for a kind of picture or painting, frequently seen in the gardens, and at the ends of galleries; designed expressly to deceive the sight by representing the continuation of an alley, a building, landscape, or the like.

But **PERSPECTIVE**, as an art, or branch of science, is the art of drawing on a plane surface pictures or true resemblances of objects, as the objects themselves appear to the eye from any distance and situation, real or imaginary. See *DRAWING*, *SECT. XIV.* and *PAINTING*, *Part I, SECT. II.*

SECT. I. HISTORICAL SKETCH of the ART of DRAWING in PERSPECTIVE.

The progress made by the ancients in this branch of drawing and painting is very little known. We only learn from Vitruvius, that Agatharchus, instructed by Æschylus, was the first who wrote upon this subject; and that afterwards the principles of this art were more distinctly taught by Democritus and Anaxagoras, the disciples of Agatharchus.

Of the theory of this art, as described by them, we know nothing; none of their writings have escaped the general wreck of ancient literature that took place in the dark ages. But the revival of painting in Italy was accompanied with a

revival of this useful and elegant branch of this art.

It was so late as the 16th century, before PERSPECTIVE was revived, or rather re-invented. It owes its revivance particularly to that branch of painting which was employed in the decorations of the theatre, where landscapes were introduced, which would have looked unnatural and horrid, if the size of the objects had not been pretty nearly proportioned to their distance from the eye.

The first who attempted to lay down the rules of perspective was Peter del Borgo, an Italian. He supposed objects to be placed beyond a transparent tablet, and endeavoured to trace the images which rays of light, emitted from them, would make upon it. What success he had in this attempt we know not, as the book which he wrote upon this subject is not extant. It is, however, very much commended by the famous Ignatius Dante; and, upon the principles of Borgo, Albert Durer constructed a machine, by which he could trace the perspective appearance of objects.

Balthazar Peruzzi studied the writings of Borgo, and endeavoured to make them more intelligible. To him we owe the discovery of points of distance, to which all lines that make an angle of 45 degrees with the ground line are drawn.

Not long after, Guido Ubbaldi, another Italian, found that all the lines that are parallel to one another, if they be inclined to the ground line, converge to some point in the horizontal line, and that through this point also a line drawn from the eye, parallel to them, will pass. These principles put together enabled him to make out a pretty complete theory of perspective.

Great improvements were made in the rules of perspective by subsequent geometers; particularly by professor Gravesande, and still more by Dr Brook Taylor, whose principles are in a great measure new, and far more general than any before him.

SECT. II. OUTLINES of the PRINCIPLES and PRACTICE of PERSPECTIVE.

To understand the principles of perspective, it will be proper to consider the place on which the representation is to be made as transparent, and interposed between the eye of the spectator and the object to be represented. Thus, suppose a person at a window looks through an upright pane of glass at any object beyond it, and, keeping his head steady, draws the figure of the object upon the glass with a black lead pencil, as if the point of the pencil touched the object itself; he would then have a true representation of the object in perspective as it appears to his eye.

To do this, two things are necessary;

1st, That the glass be laid over with strong gum-water, which, when dry, will be fit for drawing upon, and will retain the traces of the pencil; and,

2dly, That the student look through a small

hole in a thin plate of metal, fixed about from the glass, between it and his eye, as he keeps his eye close to the hole; otherwise might shift the position of his head, and consequently make a false delineation of the object.

After tracing out the figure of the object, may go over it again with pen and ink; and that is dry, put a sheet of paper upon trace it thereon with a pencil; then taking the paper and laying it on a table, he may the picture by giving it the colours, light shades, as he sees them in the object itself; then he will have a true resemblance of the object.

To such as have a general knowledge of principles of optics, this must be self-evident. For as vision is occasioned by pencils of rays coming in straight lines to the eye from every part of the visible object, it is plain that, by joining the points in the transparent plane, through which all those pencils respectively pass, a true representation must be formed of the object as it appears to the eye in that particular position and at that determined distance: and were pictures of things to be always first drawn on transparent planes, this simple operation, with the prism on which it is founded, would comprise the whole theory and practice of perspective. As this, however, is far from being the case, rules must be deduced from the sciences of optics and geometry for drawing representations of visible objects on opaque planes; and the application of these constitutes what is properly called the ART of PERSPECTIVE.

Before we lay down the fundamental principles of this art, it is proper to observe, that who person stands directly opposite to the middle of one end of a long avenue, which is straight and equally broad throughout, the sides thereof seem to approach nearer to each other in proportion as they are farther from his eye; or the angles under which their different parts are seen, become gradually less, according as the distance from the eye increases; and if the avenue be very long, the sides of it at the farthest end seem to meet: as there an object that would cover the whole breadth of the avenue, and be of a height equal to that breadth, would appear only to be a small point.

Having made these preliminary observations, we now proceed to the practice of the art, after briefly defining the terms used in it.

SECT. III. DEFINITIONS of the TERMS used in PERSPECTIVE.

1. THE *horizontal line* is that line supposed to be drawn parallel to the horizon through the eye of the spectator; or rather, it is a line which separates the heaven from the earth, and which limits the sight. Thus A, and B, *Plate XIV.* fig. 1, are two pillars below the horizontal line C D, because the eye is elevated above them; in fig. 2 they are said to be equal with it; and in fig. 3 raised above it. Thus according to the distance

† This Plate should have been numbered Plate CCLXXIV, according to its proper order; but by a mistake of the engraver, was marked XIV; and the whole impression being thrown off before the error was observed, it was too late to alter it.

points of view, the objects will be either higher or lower than the horizontal line.

2. The point of sight A, fig. 4, is that which makes the central ray on the horizontal line *ab*; or it is the point where all the other visual rays D, D, unite.

3. The points of distance C, C, fig. 4, are points set off in the horizontal line at equal distances on each side of the point of sight A.

4. And in the same figure B B represents the base line, or fundamental line.

5. E E is the abridgement of the square, of which D, D, are the sides.

6. F, F, the diagonal lines which go to the points of distance C, C.

7. Accidental points are those where the objects end: these may be cast negligently, because neither drawn to the point of sight, nor to those of distance, but meeting each other in the horizontal line. For example, two pieces of square timber G and H, fig. 5, make the points I, I, I, on the horizontal line; but go neither to the point of sight K, nor to the points of distance C, C: these accidental points serve likewise for cabinets, doors, windows, tables, chairs, &c.

8. The point of direct view, or of the front, is when we have the object directly before us; in which case it shows only the fore side; and, if below the horizon, a little of the top; but nothing of the sides, unless the object be polygonous.

9. The point of oblique view is when we see an object aside of us, and as it were, assant, or with the corner of our eye: the eye, however, being all the while opposite to the point of sight; in which case, we see the object laterally, and it presents to us two sides, or faces. The practice is the same in the side points as in the front points; a point of sight, points of distance, &c. being laid down in the one as well as the other.

10. *Ichnography* is the figure of the platform in perspective, or the plan any thing is to be raised on.

11. *Orthography* in perspective is the figure of the front or fore side of an object, as a house, &c.; or it is the figure of such an object directly opposite to the eye. As the *ichnography* represents the plan, the *orthography* represents the side opposite to the eye.

12. *Scenography* is what exhibits the object quite perfect, with all its diminutions and shadows, front, sides, height, and all raised on the geometrical plan.

SECT. IV. GENERAL RULES RESPECTING PERSPECTIVE.

I. Let every line, which in the object or geometrical figure is straight, perpendicular, or parallel to its base, be so also in its scenographic delineation, or in the description thereof, in all its dimensions, such as it appears to the eye; and let the lines, which in the object return at right angles from the fore right side, be drawn in like manner scenographically from the point of sight.

II. Let all straight lines, which in the object return from the fore right side, run, in a scenographic figure, into the horizontal line.

III. Let the object you intend to delineate, standing on your right hand, be placed also on the right hand of the point of sight; that on the left

hand, on that hand of the same point; and that which is just before, in the middle of it.

IV. Let those lines which, in the object, are equidistant from the returning line, be drawn, in the scenographic figure from that point found in the horizon.

V. In setting off the altitude of columns, pedestals, and the like, measure the height from the base line upward in the front or fore right side; and a visual ray down that point in the front shall limit the altitude of the column, or pillar, all the way behind the front side, or orthographic appearance, even to the point of sight. This rule must be observed in all figures, as well where there is a front, or fore right side, as where there is none.

VI. In delineating ovals, circles, arches, crosses, spirals, and cross arches, or any other figure in the roof of any room, first draw *ichnographically*, and so, with perpendiculars from the most eminent points thereof, carry it up to the ceiling, from which several points carry on the figure.

VII. The centre in any scenographic regular figure is found by drawing cross lines from the opposite angles; for the point where the diagonals cross is the centre.

VIII. A ground plane of squares is alike, both above and below the horizontal line; only the more it is distant either above or below the horizon, the squares will be so much the larger or wider.

IX. In drawing a perspective figure where many lines come together, to direct your eye, draw the diagonals in red, the visual lines in black, the perpendiculars in green, or any other different colour from that which you intend the figure shall be of.

X. Having considered the height, distance, and position of the figure, and drawn it accordingly, with its side or angle against the base, raise perpendiculars, from the several angles or designed points, from the figure to the base, and transfer the length of each perpendicular, from the place where it touches the base, to the base on the side opposite to the point of distance. Thus the diametrals to the perpendiculars in the base, by intersection with the diagonals, drawn to the several transferred distances, will give the angles of the figures; and so lines drawn from one point to another will circumscribe the scenographic figure.

XI. If in a landscape there be any standing waters, as rivers, ponds, and the like, place the horizontal line level with the farthest sight or appearance of it.

XII. If there be any houses, churches, castles, towers, mountains, ruins, or the like, in the landscape, consider their position, that you may find from what point in the horizontal lines to draw the front and sides of them in the picture.

XIII. In drawing objects at a great distance, observe the proportions, both in magnitude and distance, in the draught, which appear from the object to the eye.

XIV. In colouring and shadowing of every object, you must make the same colours and shades in your picture which you observe with your eye, in the landscape, especially in drawing and colouring

louring objects that lie near; but according as the distance becomes greater, the colours must be fainter, till at last they are gradually lost in a darkish sky colour.

SECT. V. MECHANICAL METHODS of DRAWING in PERSPECTIVE.

To such as are unacquainted with mathematics, we would recommend the following methods, whereby they may lay any plan in perspective, and raise pillars or buildings to due heights, according to their proper distances.

I. Suppose *L L D B A*, *fig. 6. Plate XIV*, a square piece of pavement, consisting of twenty-five pieces of marble, each a foot square: It must be measured exactly, and laid regularly down upon paper; and for the sake of a more distinct notion how every particular square will appear when you have a true perspective view of them, mark every other stone or marble black; or else number each of them as in the figure, which is divided into squares, every other one of which may be made to appear black, like the three at the bottom marked *B C D*: or *1 2 3 4*, answering to those which are marked in perspective with the same numbers.

Now to lay your plan in perspective, fix your point of sight as you observe in the figure; or more or less to the right or left, as you think proper: then draw the line *K K* parallel to, and at what distance you will from *L L*; and raise a line on each side from *L* to *K*, to form the figure you see, as a frame to your figure; then draw a line from the corner *K*, which is the point of distance, to the opposite corner *L*; and this line will regulate your work. Thus far done, draw lines from the squares of your plan to the point of sight, as exact as possible; and wherever your line of distance cuts those lines, draw lines parallel to the line *L L*, which will give you the squares in perspective, or the true figure of every square. Thus *D*, in the perspective plan, answers to *B* in the measured plan, and *1, 2, 3, 4*, answer to their corresponding squares in the same plan.

To raise either pillars, trees, houses, or any other bodies, according to their respective heights, at different distances and proportions, on the plan laid down, measure them out in perspective into squares of a foot, or any other measure. Let one of these squares, *1*, in *fig. 7*, serve for the base of a pillar a foot thick. Mark the line *L K*, by the scale of the ground plan, into equal proportions or feet; *a, b, c, d*; which being so many feet high, and standing on the base, are uprights, not in perspective. Then draw a line, *4 5* parallel to *1 2*. Join *c* and *5*, and then you have the front of a body three feet high and one foot wide, which is the object you were to raise. From *4* draw a line, with a black lead pencil, to the point of sight; and from *3* raise a line parallel to *4 5*, till it touches the pencilled line passing from *5* to the point of sight, which will give you the side appearance of the column or body, as you will see it from the place where you stand.

Then, with a pencil, from *c* draw a line to the point of sight, which will determine the line *6 7* that bounds the perspective view of the column at top. Afterwards from *a* raise a pencilled line paral-

lel to *a c* or *1 c*, till it touches the line drawn from *c* to the point of sight; then draw *6 7* parallel to *c 5*, and you will have the square of the top of the column, as observed from *A*, which is supposed to be the place where you stand.

It is to be observed, that the line drawn from *2* to *6* is only an imaginary line, and in consequence is to be rubbed out, because, not being seen from the place where you stand, it must not appear in the drawing. The same may be understood of the line drawn from *1* to *2*; but it is necessary that they appear in the draught, on account that they direct you how to regulate the top of your column, and to place it with certainty upon its base.

Lastly, finish your column with lines only, that is, from *1* to *c*, from *4* to *3*, from *3* to *7*, from *c* to *5*, from *6* to *7*, and from *1* to *4*, whereby you will have the true representation of the column, as in *fig. 8*.

When this is done, you may erect another column on any one of the squares in the same manner, observing to sling your shades all on one side, and being able to master these few examples, which may cost you very little trouble, you will be capable of doing any thing in this way.

II. The following is the method of the celebrated *Sir Christopher Wren*, and may be put in practice with great ease. *A, fig. 9, Plate XIV*, is a small sight with a short arm, *B*, which may be turned about and moved up and down the small cylinder *C D*, which is screwed into the piece *E D*, at *D*: this piece *E D* moving round about the center *E*, by which means the sight may be removed either towards *E* or *F*. *F* is a ruler fastened on the two rulers *G, G*, which serve both to keep the square frame *S S S S* perpendicular, and by their sliding through the square holes *T, T*, they serve to stay the sight either farther from, or nearer to, the said frame; on which frame is stuck with a little wax the paper *O O O O*, wherein the picture is to be drawn by the pen *I*. The pen *I* is by a small brass handle *V* so fixed to the ruler *H H*, that the point *I* may be kept very firm, so as always to touch the paper. *H H* is a ruler that is, by means of the small strings *a a a a a, b b b b b*, constantly moved horizontally or parallel to itself; at the end of which is stuck a small pin, whose head *P* is the sight which is to be moved up and down on the outlines of any object.

The construction of the strings is this: The two strings *a a a a a, b b b b b*, are exactly of an equal length: two ends of them are fastened into a small leaden weight, which is employed in a socket on the back side of the frame, and serves exactly to counterpoise the ruler *H H*, being of an equal weight with it. The other two ends of them are fastened to two small pins *H H*, after they have rolled about the small pulleys *M M, L L, K K*, by means of which pulleys if the pen *I* be taken hold of, and moved up and down the paper, the string moving very easily, the ruler will always remain in a horizontal position.

The manner of using it is this: Set the instrument upon a table, and fix the sight *A* at what height above the table, and at what distance from the frame, *S S S S*, you please. Then looking through

through the sight A, holding the pen I in your hand, move the head of the pin P up and down the outlines of the object, and the point of the pen, I, will describe on the paper, O O O O, the shape of the object so traced.

III. Another mechanical method of designing, much practised, is by means of the *Camera Obscura*; a machine that represents an artificial eye, wherein the images of external objects are exhibited distinctly in their native colours, either invertedly or erect. The camera obscura, or dark chamber, is made after two different methods. The one is the camera obscura, properly so called; that is, any large room made as dark as possible, so as to exclude all light but that which is to pass through the hole and lens in a ball fixed in a window in the room. The other is made in various forms, as that of a box, the sides of which fold out, &c. for the convenience of carrying it from place to place.

For the construction of a camera obscura, 1. Darken the room E F, fig. 10, Plate XIV. leaving only one little aperture open in the window at V, on the side I K, facing the prospect A B C D. 2. In this aperture fit a lens, either plano-convex or convex on both sides. 3. At a due distance, to be determined by experience, spread a paper or white cloth, unless there be a white wall for the purpose; then on this G H, the desired objects A B C D will be delineated invertedly. 4. If you would have them appear erect, place a concave lens between the centre and the focus of the first lens, or receive the image on a plane speculum, inclined to the horizon under an angle of 45° , or have two lenses included in a draw-tube instead of one. If the aperture do not exceed the bigness of a pea, the objects will be represented without any lens at all. And thus the objects may be drawn or copied to the greatest degree of accuracy.

The student will adopt any of these methods which he finds will be most suitable to his purpose; but the camera obscura is that which is most generally used by painters. This method has also the additional advantage of giving the student a correct idea of colouring from nature. A student who may not find it convenient to get a large camera obscura made, such as is here described, may purchase one of the common small ones made and sold at London for 15 shillings.

SECT. VI. RULES AND EXAMPLES IN SCENOGRAPHIC PERSPECTIVE, &c.

I. Suppose the pentagon ABDE, fig. 12, were to be represented by the rules of perspective on the transparent plane VP, placed perpendicularly on the horizontal plane HR, dotted lines are imagined to pass from the eye C to each point of the pentagon CA, CB, CD, &c. which are supposed, in their passage through the plane PV, to leave their traces or vestiges in the points *a, b, d*, &c. on the plane, and thereby to delineate the pentagon *abdef*; which, as it strikes the eye by the same rays that the original pentagon ABDE does, will be a true perspective representation of it.

II. To find the perspective appearance of a triangle, H B C, fig. 12, between the eye and the triangle, draw the line D E, which is called the

fundamental line; from *a* draw *a V*, representing the perpendicular distance of the eye above the fundamental line, be it what it will; and through V draw, at right angles to *a V*, H K parallel to D E: then will the plane D H K E represent the transparent plane, on which the perspective representation is to be made. Next, to find the perspective points of the angles of the triangle, let fall perpendiculars A 1, C 2, B 3, from the angles to the fundamental D E; set off these perpendiculars upon the fundamental, opposite to the point of distance K, to B, A, C. From 1, 2, 3, draw lines to the principal point V; and from the points A, B, and C, in the fundamental line, draw the right lines A K, B K, C K to the point of distance K; which is so called, because the spectator ought to be so far removed from the figure or painting, as it is distant from the principal point V. The points *a, b*, and *c*, where the visual lines V 1, V 2, V 3, intersect the lines of distance A K, B K, C K, will be angular points of the triangle *abc*, the true representation of A B C.

By proceeding in this manner with the angular points of any right-lined figure, whether regular or irregular, it will be very easy to represent it in perspective.

III. If the scenographic appearance of any solid were to be represented, suppose of a triangular prism, the base of which is the triangle *mno*, fig. 13, you need only find the upper surface of it, in the same manner as you found the lower, or base; and then joining the corresponding points by right lines, you will have the true representation of the solid in perspective. So that the work is the same as before; only you take a new fundamental line, as much higher than the former as is the altitude of that solid the scenographic representation of which you would delineate.

IV. There is still a more commodious way, which is this: Having found, as above, the base or isenographic plate *mno*, let perpendiculars be erected to the fundamental line from the three angular points, which will express the altitudes of those points. But because these altitudes, though equal in the body or solid itself, will appear unequal in the scenographic view, the farthest off appearing less than those nearer the eye, their true proportional heights may be thus determined. Any where in the fundamental line, let A B be erected perpendicularly; and equal to the true altitude; or, if the figure have different altitudes, let them be transferred into the perpendicular A B; and from the points A and B, and from all the points of intermediate altitudes, if there be any such, draw right lines to the point of sight V; those lines A V, B V, will constitute a triangle with A B, within which all the points of altitude will be contained. Through the points *o n m*, draw parallels to the fundamental line; and from the points *a o n*, &c. erect perpendiculars to those parallels; and the points where they intersect the lines A V, B V, as in *a a, b b*, &c. will determine the apparent height of the solid in the scenographic position to the eye in X.

In practice, these parallels and perpendiculars are easily drawn, by means of a good drawing-board, or table, fitted for the purpose.

V. To

V. To exhibit the perspective of a pavement, consisting of square stones, viewed directly: Divide the side AB , *fig. 14*, transferred to the fundamental line DE , into as many equal parts as there are square stones in one row. From the several points of division draw right lines to the principal point V , and from A to the point of distance K draw a right line AK , and from B to the other point of distance L , draw another LB . Through the points of the intersections of the corresponding lines draw right lines on each side, to be produced to the right lines AV and BV . Then will $afgb$ be the appearance of the pavement $AFGB$.

VI. To show the perspective appearance of a square $ABDC$, *fig. 15*, seen obliquely, and having one of its sides AB in the fundamental line. The square being viewed obliquely, assume the principal point V , in the horizontal line HR , in such a manner, as that a perpendicular to the fundamental line may fall without the side of the square AB , or at least may not bisect it; and make VK the distance of the eye. Transfer the perpendiculars AC and BD to the fundamental line DE ; and draw the right lines KB , KD ; as also AV and VC : then will A and B be their own appearances, and c and d the appearances of the points C and D : consequently $AcdB$ is the appearance of the square $ABDC$.

VII. If the square $ACBD$ be at a distance from the fundamental line DE , which rarely happens in practice, the distances of the angles A and B must likewise be transferred to the fundamental line; and even the oblique view itself is not very common. The reason why objects appear smaller as they are at a greater distance, is, that they appear according to the angle of the eye, wherein they are seen; and this angle is taken at the eye, where the lines terminating the objects meet.

VIII. For example, the eye A , *fig. 16*, viewing the object BC , will draw the rays AB and AC , which give the angle BAC ; so that an object viewed under a greater angle will appear larger, and another under a less angle smaller. That among equal objects, those at the greatest distance appear smallest, and consequently, that in all perspective the remotest objects must be made the smallest, will be manifest from the figure: the objects BC , DE , FG , HI , and KL , being all equal, but at different distances from the eye, it is evident that the angle DAE is less than the angle BAC , that FAG is less than DAE , that HAI is less than FAG , and that KAL is less than HAI . Hence the 1st, 3^d, 4th, and 5th objects will appear smaller, though really all equal, inasmuch as the angles diminish in proportion as the objects recede. If the eye, on the other hand, were removed to M , KL would appear the largest, and BC no bigger than NO .

IX. It follows, that, as objects appear such as is the angle they are seen under, if several lines be drawn between the sides of the same triangle, they will all appear equal: thus all the lines comprized between the sides ON and OP , *fig. 17*, of the triangle NOP , will appear equal to each other: and as objects comprehended under the same angle seem equal, so all comprehended under a

greater angle must seem greater, and all under a smaller angle, less.

X. This being premised, if there be a number of columns or pilasters to be ranged in perspective on each side of a hall, church, or the like, they must of necessity be all made under the same angle, and all tend to one common point in the horizon O , *fig. 18*. For instance, if from the points DE , the eye being placed at A , and viewing the first object DE , you draw the visual rays DO and EO , they will make the triangle DOE , which will include the columns DE , FG , HI , KL , MN , so as they will all appear equal.

XI. What has been said of the sides is likewise to be understood of the ceilings and pavements; the diminutions of the angles of remote objects, placed either above or below, following the same rule as those placed laterally. Trees being ranged by the same law, have the same effect as the columns, &c.; for being all comprehended in the same angle, and the two rays having each its own angle, and all the angles meeting in a point, they form a third, which is the earth, and a fourth, which may be supposed the air, and thus afford an elegant prospect.

XII. To exhibit the perspective of a circle, if the circle be small, circumscribe a square about it: draw diagonals and diameters ba and de , *fig. 19*, intersecting each other at right angles; and draw the right lines fg and bc parallel to the diameter de through b and f ; as also through f and g draw right lines meeting the fundamental line in the points 3 and 4. To the principal point V draw right lines $V1$, $V3$, $V4$, $V2$, and to the points of distance L and K draw the right lines $L2$ and $K1$. Lastly, connect the points of intersection, a, b, d, f, h, g, e, c , with the arches a, b, d, f, h, g, e, c . Thus will $abdfhgce$ be the appearance of the circle.

XIII. If the circle be large, on the middle of the fundamental AB , *fig. 20*, describe a fermicircle, and from the several points of the periphery C , F , G , H , I , &c. to the fundamental line, let fall perpendiculars $C1$, $F2$, $G3$, $H4$, $I5$, &c. From the points A , 1, 2, 3, 4, 5, &c. draw right lines to the principal point V ; as also a right line from B to the point of distance L , and another from A to the point of distance K . Through the common intersection draw right lines, as in the preceding case: thus we shall have the points e, f, g, h, c , which are the representations of these, A , C , F , G , H , I , which being connected as before, give the projection of the circle. Hence it appears not only how any curvilinear figure may be projected on a plane, but also how any pavement consisting of any kind of stones may be delineated in perspective.

XIV. If any complicated figure be proposed, it may not be easy to apply the practical rules to the description of every minute part; but by inclosing that figure in a regular one properly subdivided, and reduced into perspective, a person skilled in drawing may with ease describe the object proposed.

Upon the whole, where the boundaries of the proposed objects consist of straight lines and plain surfaces, they may be described directly by the rules of perspective: but when they are curvilinear,

near,

near, either in their sides or surfaces, the practical rules can only serve for the description of such right-lined cases as may conveniently enclose the objects, and which will enable the student to draw them within those known bounds with a sufficient degree of exactness.

It would indeed be a fruitless task, to seek, by the practical rules of perspective, to describe all the little hollows and prominences of objects; the different lights and shades of their parts, or their smaller windings and turnings; the infinite variety of the folds in drapery; of the boughs and leaves of trees; or the features and limbs of men and animals; much less to give them that roundness and softness, that force and spirit, that easiness and freedom of posture; that expression and grace, which are requisite to a good picture.

SECT. VII. CONCLUSION.

It may appear a bold assertion to say that the very short sketch now given of the art of perspective is a sufficient foundation for the whole practice, and includes *all* the expeditious rules peculiar to the problems which most generally occur. The scientific foundation being so simple, the structure need not be complex, nor swell into such volumes as have been published on the subject: volumes which, by their size, deter from the perusal, and give the simple art all the appearance of mystery; and by their prices defeat the design of their authors, the dissemination of knowledge among the practitioners.

Treatises on perspective have acquired their bulk by long and tedious discourses, minute explanations of common things, or by great numbers of examples: which indeed make some of these books valuable by the variety of curious cuts, but do not at all instruct the reader by any improvements in the art itself. For most of those who have treated this subject have been more conversant in the practice of designing, than in the principles of geometry; and therefore when, in their practices, the cases which offered have put them on trying particular expedients, they have thought them worth communicating to the public as improvements of the art; and each author, fond of his own little expedient, (which a scientific person would have known for an easy corollary from the general theorem), have made it the principle of a practical system; thus *narrowing* instead of *enlarging* the knowledge of the art; and thus the student, tired of the bulk of the volume, in which a single maxim is tediously spread out, and the principal on which it is founded kept out of his sight, contents himself with a remembrance of the maxim (not understood), and keeps it slightly in his eye, to avoid gross errors.

For the truth of this assertion, we may appeal to the whole body of painters and draughtsmen; and it must not be considered as an imputation on them of remissness or negligence, but as a necessary consequence of the ignorance of the authors from whom they have taken their information. This may seem severe, but it is not the less just. Several mathematicians of eminence have written on perspective, treating it as the subject of pure geometry, as it really is; and the performances of Dr Brooke, Taylor, Gravesande, Wolfe, De la

Caille, Emerson, and Malton, are truly valuable, by presenting the art in all its perspicuity and universality.

The works of Taylor and Emerson are peculiarly valuable, on account of the very ingenious and expeditious contructions which they have given, suited to every possible case. The merit of the first author has been universally acknowledged by all the British writers on the subject, who candidly declare that their own works are composed on the principals of Dr Taylor: but any man of science may perceive that these authors have either not understood them, or aimed at pleasing the public by fine cuts and uncommon cases; for, without exception, they have omitted his favourite contructions, which had gained his predilection by their universality, and attached themselves to inferior methods, more usually expedient perhaps, or *inventions* (as they supposed) of their own.

What has been laid down in this treatise is not *professed* to be according to the principles of Dr Taylor, because the principles are not *peculiar* to him, but the necessary results of the theory itself, and inculcated by every *mathematician* who had considered the subject. They are sufficient not only for directing the ordinary practice, but also for suggesting modes of construction for every case out of the common track. And any person of ingenuity may have a laudable enjoyment in this, without much stretch of thought, inventing rules for himself; and will be better pleased with such fruits of his own ingenuity, than in reading the tedious explanation of examples devised by others. We would therefore, with Dr Taylor, "advise all our readers not to be contented with the scheme they find here; but, on every occasion, to draw new ones of their own, in all the variety of circumstances they can think of. This will take up more time at first, but they will find the vast benefit and pleasure of it by the extensive notions it will give them of the nature of the principles."

The art of perspective is necessary in all arts where there is any occasion of designing; but it is more particularly necessary for landscape drawing, which can do nothing without it. A figure in a picture, which is not drawn according to the rules of perspective, does not represent what is intended. Indeed we hesitate not to say, that a picture which is deficient in this particular, is as blamable as any composition in writing which is deficient in point of grammar.

It would certainly be thought ridiculous were any person to pretend to write an heroic poem, or a fine discourse, upon any subject, without understanding the grammatical propriety of the language in which he wrote; and it seems no less ridiculous for one to attempt to make a good picture without understanding perspective. Yet how many pictures are there to be seen, that are highly valuable in other respects, and yet are extremely faulty in this point? Indeed this fault is so general, that we hardly remember to have seen a picture entirely free of it; and what is the more to be lamented, the greatest masters have been the most guilty of it. Such examples make it the less regarded, but the fault is only the more to be lamented, and requires the more care to avoid it.

A principal cause of this fault is doubtless the

wrong method that is generally used in educating persons in this art: for young people are generally put early to drawing; and when they have acquired a facility in that, they are immediately put to colouring. These things they learn by practice, and as it were by rote; but are not instructed in any rules of art; by which means, when they come to make designs of their own, though they are very expert at drawing and colouring every thing that offers itself to their fancy; yet, for want of instruction in the strict rules of the art, they do not know how to govern their inventions with judgment. Thus they become guilty of so many gross mistakes, that they prevent themselves, as well as others, from finding that satisfaction they otherwise would do in their performances. To correct this, we would recommend it to the masters of the art, to begin their instructions with the technical parts of painting, before they let the students loose to follow the inventions of their own imaginations.

In a word, it should be remembered, that the art of drawing, taken in its full extent, consists of two parts; the inventive and executive. The inventive part, like poetry, belongs more properly and immediately to the original design, (which it invents and disposes in the most proper and agreeable manner), than to the finished drawing, which is only a copy of that design already formed in the imagination of the artist. The perfection of this art depends upon the thorough knowledge the artist has of all the parts of his subject; the beauty of it consists in the happy choice and disposition that he makes of it: and it is in this that the genius of the artist discovers itself, while he in-

dulges and humours his fancy, which here is quite unconfin'd. But the other, the executive part of painting, is wholly confined to the rules of art, which cannot be dispensed with in this, and therefore the student ought to govern himself entirely by these rules.

Nothing ought to be more familiar to the student than perspective; for it is the only thing that can make the judgment correct, and will help the fancy to invent with ten times the ease that it could do without it.

To conclude, although a knowledge of perspective is necessary, in drawing, yet the student must not think of restricting himself to mathematical exactness in finishing a perspective view. However paradoxical it may appear, the exactness of mathematics in perspective must be corrected by the eye; otherwise the most accurately finished perspective, done upon the strictest mathematical principles, will have a very stiff, awkward, and unnatural appearance. In a word, the student must combine a knowledge of mathematics with an accurate eye and correct taste, and at the same time that he never loses sight of the one, take the utmost care not to trespass against the other. In drawing perspective views, however, of celebrated buildings, such as the *Register Office* of Edinburgh, or *Somerset-house* at London, where there is no view of the street given along with them, they must always be done with the strictest mathematical exactness. But where such public buildings are introduced as forming part of a street, measurement is not strictly attended to, as it would give the whole too stiff an appearance.

P E R

P E R

(1.) PERSPECTIVE, AERIAL, is sometimes used as a general denomination for that which is more restrictedly called, 1. *Aerial perspective*, or the art of giving a due diminution or degradation to the strength of light, shade, and colours of objects, according to their different distances, the quantity of light which falls upon them, and the medium through which they are seen: 2. The *CHIARO OSCURO*, or *clair obscure*, which consists in expressing the different degrees of light, shade, and colour of bodies, arising from their own shape, and the position of their parts, with respect to the eye and neighbouring objects, whereby their light or colours are affected; and, 3. *KEEPING*, which is the observance of a due proportion in the general light and colouring of the whole picture, so that no light or colour in one part may be too bright or strong for another. See *KEEPING*.

(2.) PERSPECTIVE, BIRD'S EYE VIEW IN, is that which supposes the eye to be placed above any building, &c. as in the air at a considerable distance from it. This is applied in drawing the representations of fortifications, when it is necessary not only to exhibit one view as seen from the ground, but so much of the several buildings as the eye can possibly take in at one time from any situation. In order to this, we must suppose the eye to be removed a considerable height above the ground, and to be placed as it were in the air, so

as to look down into the building like a bird that is flying. In representations of this kind, the higher the horizontal line is placed, the more of the fortification will be seen, and *vice versa*.

(3.) PERSPECTIVE GLASS, or GRAPHICAL PERSPECTIVE. See DIOPTRICS, § 49, and OPTICS.

(4.) PERSPECTIVE MACHINE, an instrument by which any person, without the help of the rules of art, may delineate the true perspective figures of objects. Mr Ferguson has described a machine of this sort, of which he ascribes the invention to Dr Bevis. *fig. 4. of Pl. CCLXXXIII.* is a plane of this machine, and *fig. 5.* is a representation of it when made use of in drawing distant objects in perspective.—In *fig. 4. a b e f* is an oblong square board, represented by *ABEF* in *fig. 5.* *x* and *y* (*X* and *Y*) are two hinges on which the part *c d* (*CLD*) is moveable. This part consists of two arches or portions of circles *c m l* (*CML*) and *d n l* (*DNL*) joined together at the top *l* (*L*), and at bottom to the cross bar *d c* (*DC*), to which one part of each hinge is fixed, and the other part to a flat board, half the length of the board *a b e f* (*ABEF*), and glued to its uppermost side. The centre of the arch *c m l* is at *d*, and the centre of the arch *d n l* is at *c*. On the outer side of the arch *d n l* is a sliding piece *n* (much like the nut of the quadrant of altitude belonging to a common globe), which may be moved to any part of the arch between *d* and *l*: and there

there is such another slider *o* on the arch *c m l*, which may be set to any part between *c* and *l*.—A thread *c p n* (CPN) is stretched tight from the centre *c* (C) to the slider *n* (N), and such another thread is stretched from the centre *d* (D) to the slider *o* (O); the ends of the threads being fastened to these centres and sliders. By moving these sliders on their respective arches, the intersection *p* (P) of the threads may be brought to any point of the open space within the arches.—In the groove *k* (K) is a straight sliding bar *i* (I), which may be drawn further out, or pushed further in at pleasure. To the outer end of this bar *I* (fig. 5.), is fixed the upright piece *H Z*, in which is a groove for receiving the sliding piece *Q*. In this slider is a small hole *r* for the eye to look through, in using the machine: and there is a long slit in *H Z*, to let the hole *r* be seen through, when the eye is placed behind it, at any height of the hole above the level of the bar *I*.

(5.) PERSPECTIVE MACHINE, METHOD OF USING THE. Suppose you want to delineate a perspective representation of the house *q r s p*, Fig. 5. (which we must imagine to be a great way off,) place the machine on a steady table, with the end *E F* of the horizontal board *ABEF* toward the house, so that, when the Gothic-like arch *D L C* is set upright, the middle part of the open space (about *P*) within it may be even with the house when you place your eye at *Z* and look at the house through the small hole *r*. Then fix the corners of a square piece of paper with four wafers on the surface of that half of the horizontal board which is nearest the house; and all is ready for drawing. Set the arch upright, as in the figure; which it will be when it comes to the perpendicular side *s* of the upright piece *s s* fixed to the horizontal board behind *D*. Then place your eye at *Z*, and look through the hole *r* at any point of the house, as *q*, and move the sliders *N* and *O* till you bring the intersection of the threads at *P* directly between your eye and the point *q*; then put down the arch flat upon the paper on the board, as at *ST*, and the intersection of the threads will be at *W*. Mark the point *W* on the paper with the dot of a black lead pencil, and set the arch upright again as before: then look through the hole *r*, and move the sliders *N* and *O* till the intersection of the threads comes between your eye and any other point of the house, as *p*; then put down the arch again to the paper, and make a pencil mark thereon at the intersection of the threads, and draw a line from that mark to the former one at *W*; which line will be a true perspective representation of the corner *p q* of the house. Proceed in the same manner, by bringing the intersection of the threads successively between your eye and other points of the outlines of the house, as *r*, *s*, &c. and put down the arch to mark the like points on the paper, at the intersection of the threads; then connect these points by straight lines, which will be the perspective outlines of the house. In like manner find points for the corners of the door and windows, top of the house, chimneys, &c. and draw the finishing lines from point to point: then shade the whole, making the lights and shades as you see them on the house itself, and you will have a true perspective figure of it.

—Great care must be taken, during the whole time, that the position of the machine be not shifted on the table; and to prevent such an inconvenience, the table should be very strong and steady, and the machine fixed to it either by screws or clamps. (See PERSPECTIVE.) Mr Peacock likewise invented three simple instruments for drawing architecture and machinery in perspective, of which the reader will find sketches and descriptions in the 75th vol. of the *Philos. Transf.*

* PERSPICACIOUS. *adj.* [*perspicax*, Latin.] Quickfighted; sharp of sight.—It is as nice and tender in feeling, as it can be *perspicacious* and quick in seeing. *South.*

* PERSPICACIOUSNESS. *n. f.* [from *perspicacious*.] Quickness of sight.

* PERSPICACITY. *n. f.* [*perspicacité*, French.] Quickness of sight.—He that laid the foundations of the earth cannot be excluded the secrecy of the mountains; nor can there any thing escape the *perspicacity* of those eyes which were before light, and in whose optics there is no opacity. *Brown.*

* PERSPICIENCE. *n. f.* [*perspicience*, Latin.] The act of looking sharply. *Dist.*

* PERSPICILL. *n. f.* [*perspicillum*, Lat.] A glass through which things are viewed; an optick glass. Little used.—

Let truth be

Ne'er so far distant, yet chronology

Will have a *perspicil* to find her out. *Crashaw.*

—The *perspicil*, as well as the needle, hath enlarged the habitable world. *Glanville.*

(1.) * PERSPICUITY. *n. f.* [*perspicuité*, Fr. from *perspicuus*.] 1. Transparency; translucency; diaphaneity.—As for diaphaneity and *perspicuity*, it enjoyeth that most eminently. *Brown.* 2. Clearness to the mind; easiness to be understood; freedom from obscurity or ambiguity.—The verses containing precepts, have not so much need of ornament as of *perspicuity*. *Dryden.*—*Perspicuity* consists in the using of proper terms for the thoughts, which a man would have pass from his own mind into another's. *Lodge.*

(2.) PERSPICUITY. See ORATORY, § 124—131.

* PERSPICUOUS. *adj.* [*perspicuus*, Latin.] 1. Transparent; clear; such as may be seen through; diaphanous; translucent; not opaque.—The clear and *perspicuous* body effecteth white, and that white a black. *Peatham.* 2. Clear to the understanding; not obscure; not ambiguous.—

The purpose is *perspicuous*. *Shak.*

—All this is so *perspicuous*, so undeniable, that I need not be over industrious in the proof of it. *Spratt.*

* PERSPICUOUSLY. *adv.* [from *perspicuus*.] Clearly; not obscurely.—The case is no sooner made than resolved; if it be made not enwrapped, but plainly and *perspicuously*. *Bacon.*

* PERSPICUOUSNESS. *n. f.* [from *perspicuus*.] Clearness; freedom from obscurity; transparency; diaphaneity.

* PERSPIRABLE. *adj.* [from *perspire*.] 1. Such as may be emitted by the cuticular pores.—In an animal under a course of hard labour, aliment too vaporous or *perspirable* will subject it to too strong a perspiration, debility, and sudden death. *Arbutnot.* 2. Perspiring; emitting perspiration. *H b s*

piration. Not proper.—Hair cometh not upon the palms of the hands or soles of the feet, which are parts more *perspirable*: and children are not hairy, for that their skins are most *perspirable*. *Bacon*.—Electricks will not commonly attract, unless they become *perspirable*. *Brown*.

(1.) * *PERSPIRATION*. *n. f.* [from *perspire*.] Excretion by the cuticular pores.—Insenfible *perspiration* is the last and most perfect action of animal digestion. *Arbutnot*.

(2.) * *PERSPIRATION*, in medicine, is the evacuation of the juices of the body through the pores of the skin. *Perspiration* is distinguished into sensible and insensible; and here sensible *perspiration* is the same with sweating, and insensible *perspiration* that which escapes the notice of the senses. This last is the idea affixed to the word *perspiration* when used alone.

* *PERSPIRATIVE*. *adj.* [from *perspire*.] Performing the act of *perspiration*.

* To *PERSPIRE*. *v. n.* [from *perspiro*, Lat.] 1. To perform excretion by the cuticular pores. 2. To be excreted by the skin.—Water, milk, whey, taken without much exercise, so as to make them *perspire*, relax the belly. *Arbutnot*.

PERSTAIN, a town of Bohemia, in the circle of Boleslau; 14 miles NW. of Jung Buntzel.

* To *PERSTRINGE*. *v. a.* [from *perstringo*, Latin.] To gaze upon; to glance upon. *Diß*.

* *PERSUADABLE*. *adj.* [from *persuade*.] Such as may be persuaded.

* To *PERSUADE*. *v. a.* [from *persuadeo*, Lat. *persuader*, Fr.] 1. To bring to any particular opinion.—Let every man be fully *persuaded* in his own mind. *Rom*.—We are *persuaded* better things of you. *Heb. vi. 9*.—Joy over them that are *persuaded* to salvation. 2 *Esdrops*, vii.—Let a man be ever so well *persuaded* of the advantages of virtue, yet, till he hungers and thirsts after righteousness, his will will not be determined to any action in pursuit of this confessed great good. *Locke*.—Men should seriously *persuade* themselves, that they have here no abiding place. *Wake*. 2. To influence by argument or expostulation. *Persuasion* seems rather applicable to the passions, and argument to the reason; but this is not always observed.—Philoclea's beauty not only *persuaded*, but so *persuaded* as all hearts must yield. *Sidney*.—They that were with Simon, being led with covetousness, were *persuaded* for money. 2 *Muc*.—To fit cross-leg'd, or with our fingers pectinated, is accounted bad, and friends will *persuade* us from it. *Brown*.—How incongruous would it be for a mathematician to *persuade* with eloquence, that he might prevail with his hearers to believe that *three and three make five*? *Wilkins*.—I should be glad, if I could *persuade* him to write such another critique on any thing of mine. *Dryden*. 3. To inculcate by argument or expostulation.—To children, afraid of vain images, we *persuade* confidence by making them handle and look nearer such things. *Taylor*. 4. To treat by persuasion. A mode of speech not in use.—

Twenty merchants have all *persuaded* with him. *Shak*.

* *PERSUADER*. *n. f.* [from *persuade*.] One who influences by persuasion; an importunate ad-

vifer.—Himself was the author or principal *persuader* of that counsel. *Bacon*.—

He soon is mov'd

By such *persuaders* as are held upright. *Daniel*.
Hunger and thirst at once,

Pow'rful *persuaders*! *Milton*.

* *PERSUASIBLE*. *adj.* [from *persuafibilis*, Lat. *persuafibile*, Fr. from *persuadeo*, Latin.] To be influenced by persuasion.—It makes us apprehend our own interest in that obedience, and makes us tractable and *persuafible*. *Gov. of the Tongue*.

* *PERSUASIBLENESS*. *n. f.* [from *persuafible*.] The quality of being flexible by persuasion.

(1.) * *PERSUASION*. *n. f.* [from *persuasion*, Fr. from *persuasio*, Lat.] 1. The act of persuading; the act of influencing by expostulation; the act of gaining or attempting the passions.—

Thou hast all the arts of fine *persuasion*.

Otway.

2. The state of being persuaded; opinion.—The general *persuasion* of all men does to account it. *Hooker*.—You are abus'd in too bold a *persuasion*. *Shak*.—When we have no other certainty of being in the right, but our own *persuasions* that we are so; this may often be but making one error the gage for another. *Gov. of the Tongue*.—The obedient and the men of practice shall triumph over their present imperfections, till *persuasion* pass into knowledge, and knowledge advance into assurance. *South*.

(2.) *PERSUASION*, ART OF. See *ORATORY*.

* *PERSUASIVE*. *adj.* [from *persuafif*, French; from *persuadeo*.] Having the power of persuading; having influence on the passions.—In prayer, we do not so much respect what precepts art delivereth, touching the method of *persuasive* utterance in the presence of great men, as what doth most avail to our own edification. *Hooker*.—Let Martius resume his farther discourse, as well for the *persuasive* as for the consult. *Bacon*.—Notwithstanding the weight and fitness of the arguments to persuade, and the light of man's intellect to meet this *persuasive* evidence with a suitable assent, no assent followed. *South*.

* *PERSUASIVELY*. *adj.* [from *persuafive*.] In such a manner as to persuade.—

The serpent with me

Persuasively hath fo prevail'd, that I

Have also tasted.

Milton.

—Many who live upon their estates cannot so much as tell a story, much less speak clearly and *persuasively* in any business. *Locke*.

* *PERSUASIVENESS*. *n. f.* [from *persuafive*.] Influence on the passions.—An opinion of the successfulness of the work being as necessary to found a purpose of undertaking it, as either the authority of commands, or the *persuasiveness* of promises. *Hammond*.

* *PERSUASORY*. *adj.* [from *persuaserius*, Latin; from *persuadeo*.] Having the power to persuade.—Neither is his *persuatory*. *Brown*.

(1.) * *PERT*. *adj.* [from *pert*, Welsh; *pert*, Dutch; *opfert*, French.] 1. Lively; brisk; smart.—

Awake the *pert* and nimble spirit of mirth.

Shak.

On the tawny sands and shelves,
Trip the *pert* fairies.

Milton.

From

From *pert* to stupid finks lupinely down,
In youth a coxcomb, and in age a clown!

Sp. Rator.

2. Saucy; petulant; with bold and garrulous loquacity.—All servants might challenge the same liberty, and grow *pert* upon their masters. *Collier.*
—A lady bids me in a very *pert* manner mind my own affairs. *Addison.*

Sometimes by a frown,

When they grew *pert*, to pull them down.

Swift.

(2.) **PERT**, in geography, a parish of Scotland, in Angus-shire, united to that of Logie. See **LOGIE**, N° 3. Its church is seated on the North Esk, near the Old North Water Bridge, 3 miles above Logie.

* To **PERTAIN**. *v. n.* [*pertinere*, Lat.] To belong; to relate.—Men hate those that affect that honour by ambition, which *pertaineth* not to them. *Hayward.*—A cheveron or rather of an house, a very honourable bearing, is never seen in the coat of a king, because it *pertaineth* to a mechanical profession. *Peachment.*

PERTELS, a town of Germany, in Austria; 6 miles N. of Bohmish Waidhofen.

* **PERTERBRATION**, *n. f.* [*per* and *terbratio*, Lat.] The act of boring through. *Ainsl.*

(1.) **PERTH**, or **PERTHSHIRE**, one of the largest counties in Scotland. It extends 77 miles in a straight line, from Blairgowrie on the E. to the top of Ben-Loi on the W. and measures 62 miles between the Frith of Forth at Culrois, on the S. and the boundary of the forest of Atholl on the N. where the Tilt rises. It is bounded on the N. by a part of Inverness and Aberdeen shires; on the E. by Forfarshire; on the SE. by the Frith of Tay, and the counties of Kinross and Fife; on the S. by the Forth, and the counties of Clackmannan and Stirling; on the SW. by Dumbartonshire; on the W. by Argyllshire; and on the NW. by Invernesshire. It comprehends the districts of Atholl, Braidalbin, Monteith, Stratherne, Stormont, Balquhider, Gowrie, Rannoch, and **PERTH PROPER**. Its total contents are estimated at 5000 square miles; which amount to 3,200,000 Scots acres, or 4,068,640 English acres. It is generally divided into the Highlands and Lowlands; the **GRAMPIAN** mountains form the line of division between these. Some of the **OCHIL** and **SIDLAH** hills, although of great elevation, are ranked in the Lowland division, because the language and manners of the inhabitants differ from those of the people in the Highland district, on the other side of the Grampians. The Highland division contains 18 parishes; the Lowland 58; in all 76. The surface of this extensive county is highly and beautifully diversified: and perhaps no district of equal extent in the world exhibits scenes of more striking and romantic magnificence, intermingled with nature in its most rugged form, as well as clothed in its most beautiful garb. The soil likewise consists of all the varieties known in the kingdom; the carle or rich loamy soil being most prevalent on the banks of rivers and low grounds; and the sandy and tilly soil being chiefly prevalent on the sides of the hills. The climate is as various as the soil and surface. The hilly country abounds with pasture, on which are fed black

cattle, horses, sheep, goats, and deer. The heaths, woods, and forests, are well stored with variety of game; the rivers teem with salmon, perch, and trout. The valleys are in general warm, and the crops early, and all the usual grain and roots are raised; but in rainy seasons they are often much injured by the rivers overflowing their banks. The two principal rivers are the **FORTH** and the **TAY**: but there are many inferior rivers in the county; particularly the **ALMOND**, **ALLAN**, **ERNE**, **Bran**, **Garry**, **Enrick**, **Blane**, **ISLA**, **DOVAN**, **Teith**, &c. (See these articles.) The principal lakes are **Loch Tay**, **Loch Erne**, **Loch Dochart**, **Loch Ericht**, **Loch Catherine**, **Loch Rannoch**, &c. Several of the highest mountains of Scotland are in this county; particularly **Ben-Lawers**, **BEN-LEDI**, **BENMORE**, **SCHECHELLION**, **MORDUN**, **Ben-voirlich**, &c. The prospects from the tops of these mountains are in general grand, extensive, and delightful; but the view from the top of **MORDUN**, in particular, is so exceedingly rich and various, that Mr Pennant styled it, "The **GLORY OF SCOTLAND**." Orchards and gardens are numerous, and abound with every kind of fruits, roots, and herbs found in S. Britain. There are several extensive moor, particularly that of Kincardine. (See **KINCARDINE**, N° 6; and **MOSS**, § 7.) There are also numerous extensive forests, abounding with oak, fir, elm, ash, larch, and various other kinds of trees. Lime-stone, iron-stone, slate, and free-stone abound, as well as some lapis calaminarius; and coals are found in the S. parts of the county. Copper and lead mines have been discovered in some places; and **STEATITES**, or rock soap, is found in Monteith, 3 feet thick, and extending above 4 miles in length. Besides **PERTH**, the capital, this county contains the royal borough of Culrois, and the towns of Abernethy, Auchterderran, Dumblane, Crieff, Scone, Dunkeld, Coupar, Alyth, and Longforgan; and above 60 considerable villages; as Callander, Blairgowrie, Kincardine, Muthil, Inchture, &c. Among the numerous seats of the nobility and gentry, which ornament this county, are Blair Castle, and Dunkeld House, seats of the D. of Atholl; Taymouth, the E. of Braidalbin's seat; Duplin Castle, the seat of the E. of Kinnoul; Drummond Castle, the seat of the Perth family; the palace of Scone, the seat of Lord Mansfield; Ouchtertyre, the seat of Sir Patrick Murray; Duneira, the seat of Lord Vife, Melville; Blair-Drummond, the seat of Mr Home-Drummond; Lawers, the seat of Col. Robertson; Methven Castle, the seat of Lord Methven; Castle Huntly, the seat of George Paterson, Esq.; Lundie, the seat of Lord Vife, Duncan; Castle-Gray and Kinfauns, seats of Lord Gray; Drimmie, the seat of Lord Kinnaird; Culrois Abbey, a seat of the E. of Dundonald; Valleyfield, the seat of Sir Charles Preston; Balgowan, the seat of Gen. Graham; besides Cardross, Gartmore, Kier, Lenrick, Castle Menzies, Delvin, Invercauld, Monzie, Glenaeles, Aberuchil, Rossie, Freeland, Gask, Kilgraston, St Martins, Blair-Gowrie, Errol House, Pitfour, Seggieden, Murthly, and many others. The valued rent of this extensive county is estimated at 339,818*l.* 5*s.* 8*d.* Scots; the real rent at 230,900*l.* sterling. The total population, by the reports to Sir John Sinclair, between 1791 and

1798,

1798, amounting to 133,274; and the increase, since 1755, to 14,371. The houses and attire, even of the commonalty, are neat and decent; and every peasant can produce a good quantity of linen, and great store of blankets, made in his own family. Flax is reared by every husbandman; and being dressed at home, is spun by the females of his family into thread for linen; this is woven by country weavers, of whom there is a great number through all the Low Country, and afterwards bleached or whitened by the good-wife and her servants; so that the whole is made fit for use at a very small expence. They likewise wash, card, spin, and weave their wool into tartan for plaids, kerfies, and coarse russet cloth, for common wearing, besides great part of it which is knit into caps, stockings, and mitts. Plaids, made of the finest worsted, are worn either plain or variegated, as veils, by women of the lower, and even of the middle rank; nay, some years ago, ladies of fashion wore silken plaids with an undress: this is a loose piece of drapery, gathered about the head, shoulders, and waist, on which it is crossed, so as to leave the hands at liberty, and produces a very good effect to the eye of the spectator. The Lowlanders of Perthshire are civilized, hospitable, and industrious: the commerce of the country consists chiefly in corn, linen, and black cattle. (See TRADE.) This county sends one representative to the imperial British Parliament.

(2) PERTH, a parish in the above county, of a semicircular form, the Tay, on the E. forming the diameter. It is about 4 miles long from N. to S. and 3 broad, from E. to W. It is separated by the Tay from the parishes of Scone, Kinnoull, and Kinnfains, on the E.; on the SE. it is bounded by that of Rhynd; on the S. by those of Forteviot and Dumbarny; and on the W. by those of Tibermauir and Aberdalgie. The soil is partly loam and partly clay; and being very fertile, yields rich crops. The chief villages are Balhousie, Pitheavells, Feu-housie, Craigie, Tulloch, and Muir-town of Balhousie. There are two established ministers besides two helpers. The total population, in 1793, was estimated by the rev. J. Scott, at 19,871: the increase, since 1755, at 10,852.

(3.) PERTH, an ancient city of Scotland, capital of the above county and parish, as it formerly was of the whole kingdom. The name is derived by some from the Celtic, in which language *Peart* or *Peirt* is said to signify a *finished labour*, or *complete work*; but by others from its ancient name BERTHA, by the easy and natural change of B into P; which name in the German language signifies *thustrious* or *celebrated*. About the time of the Roman invasion it was possessed by that tribe of the Picts called HORRETI, along with Fifeshire, and that portion of Perthshire, which lies S. of the Tay; though the rev. Dr Playfair places their territory E. of that river. (See HORRETI.) What kind of town Bertha was previous to the arrival of the Romans, whether it was compactly built, or only a collection of straggling huts, for the occasional assembling of the people, cannot now be ascertained. But it is generally admitted, that it was regularly built and fortified at the command of Julius Agricola, about A. D. 79, while he was prosecuting his conquests on the N. side of the

Forth; and by him, as a memorial of his success, named VICTORIA. And ample privileges are said to have been bestowed on it by the Romans. It is recorded by Tacitus, and quoted from him, by Mr Henry Adamson, a native of Perth, and the son of Provost James Adamson, in his poem entitled *The Muses Threnodies*, that "When Agricola and his army first saw the Tay, and the adjacent plain on which Perth is now situated, they cried out, *Ecce Tiber! Ecce Campus Martius!*" Behold the Tiber! Behold the Field of Mars!" comparing what they saw to their own river, and to the extensive plain in the neighbourhood of Rome." Our poetical historian adds, that "Agricola pitched his camp in the middle of that field, on the spot where Perth stands. He proposed to make it a winter camp; and afterwards built what he intended should be a colonial town. He fortified it with walls, and with a strong castle, and supplied the ditches with water, by an aqueduct from the Almond. Also, with much labour to his soldiers, and probably to the poor natives, a large wooden bridge was constructed over the river at Perth."

"He was nearly 5 years establishing the Roman power on the N. of the Forth, till he was recalled by Domitian."—Holinshed says, that there was an ancient British temple built at Perth, in the field near the Tay, dedicated to Mars. Geoffrey of Monmouth says, in his legendary history, that it was built long before the birth of our Saviour, by a British king, who was the son of Regan the second daughter of K. Lear; that he governed the whole island; and built other two temples, one to Mercury at Bangor, and the other to Apollo at Cornwall. Subterraneous relics of this ancient edifice were discovered 3 feet below the street, about 1786, when Col. Mercer of Aldie erected an elegant modern house on the site of the ancient temple. Two flat arches were discovered, under each of which was an apartment 26 feet long, and 14 broad; with walls 3½ feet thick. The town of Perth, as well as its ancient church and bridge, built by the Picts, were dedicated by that people to St John, the tutelary saint of the town; whence some persons gave it the name of St JOHN'S TOWN; but the rev. Mr Scott says, "it never was so called in any of the public writs, nor by the inhabitants in general." Fordun, Major, and others of our ancient historians, have recorded, that in 1210, in the reign of K. William, a great inundation happened, which overflowed the town, carried off the large bridge of St John, overthrew an ancient chapel, a rampart, and many houses; and that the king with his two sons were obliged to make their escape in a boat. Upon this fact, Hector Boece built a fabulous story, which is adopted by Buchanan himself, that the ancient town of Bertha having been thus swept away, King William built a new city, in a different situation, where Perth now stands: but this fable has been sufficiently refuted by Lord Hailes, Walter Goodall, and other eminent antiquaries; and there are many hundreds of charters still extant, which prove, that the city of Perth existed, and was known by its present name, long before the date fabulously assigned for its erection by Boece. Between 1201 and 1459, no fewer than 14 national councils were held at Perth. In 1298, its walls were

were rebuilt by Edward I. of England, who made it the residence of his deputies; till they were expelled, after an obstinate resistance, by K. Robert Bruce. He attacked it in 1306, but was repulsed by the Earl of Pembroke, who sallied out and defeated Bruce at Methven. In 1311, however, Robert, after a siege of six weeks, scaled the walls, took and burnt the town, and levelled the works. After the battle of Duplin, (see DUPLIN, N° 1.), Edward Baliol took and fortified it: but it was soon after surprised, by the Scots, and its fortifications razed. K. Edward III. took possession of it, in 1355, made it his head quarters, and resided in it for some time. The English historians have recorded, that John E. of Cornwall, brother to K. Edward III., died at Perth, in Oct. 1336; but they omit a singular circumstance mentioned by Fordun, and quoted by the rev. Mr Scott, in his Statistical Account of Perth; viz. that he was "mortally wounded by the small sword or dagger of his brother," who had "remonstrated to him upon the wanton cruelties he had committed upon the Scots in the western counties, which he had wasted with fire and sword, though the people had submitted; burning the churches, and many persons in them, who had fled thither as to holy places of refuge;" &c. In 1339, Perth stood a long siege against the regent, Robert, but was taken by draining the ditch. In 1437, K. James I. was murdered, at the Black Friars monastery, by Robert Graham, who gave him 28 wounds, and the queen two defending him. The walls of the city were repaired by his son James II. In 1644, Perth was seized by the Marq. of Montrose, after the battle of Tibbermore. In 1651, Cromwell took it; and the Commissioners built a citadel on the S. Inch, capable of containing 500 men. In 1715, the Earl of Mar, with the rebels, lay a considerable time in it, after the battle of Dunblane; (see DUNBLANE, N° 2.) but they were dislodged by the D. of Argyll, and obliged to retreat northwards. In 1745, the rebels again obtained possession of it; proclaimed James III.; appointed new magistrates, and attempted to fortify it, but were soon compelled to retreat.—The first public avowal of the reformed religion, in Scotland, was made at Perth; where the celebrated JOHN KNOX, preached a sermon against idolatry, before several of the principal nobility, on Thursday, 12th May, 1559. Immediately after sermon, a popish priest having given some provocation, the people rose, and broke down the images and altars. A weekly sermon has been preached upon Thurs. ever since. The city is populous and handsome; the streets are well paved, and tolerably clean; and the houses, though not stately, make a very decent appearance. Both the streets and houses are, for the greater part, disposed on a regular plan. Several streets run in a direction parallel with the river, as far as a right line can bear this relation to a curve line, nearly between E. and W. These are again intersected by others extending between N. and S. Many of the houses in the street called the *Water-Gate*, seem to be very old. Towards the S. end of that street stands the famous palace of the Gowrie family. The house, and the very room, where the attempt of the Gowries to seize or assassinate the king was supposed to have been made, are now

converted into barracks for a train of artillery; but the back stair, down which the Ruthvens were thrown, is pulled down. This strange event, however magnified or attested by contemporary writers, is made up of so many improbabilities, or circumstances for which no reason can be assigned, that Lord Hailes, in republishing the account printed by authority, 1600, preparatory to his further observations on it, seems justified in absolutely discrediting a fact which passed for problematical with so many persons at the very time. Dr Robertson supposes it a plot of Elizabeth to get James into her power. Mr Cant having discussed the whole story of the conspiracy in his notes on *Adamson's Muse's Threnodie*, p. 185—261, concludes, "that as this would have been a very impolitic measure, the best way of accounting for it is by James's known hatred to the Puritans, and wish to get rid of two popular characters." The king had been seized and forced from his favourites by the father of the Ruthvens 12 years before (1582), and though he affected to forgive him, took the first opportunity to condemn and execute him as a traitor, in 1584. Mr Camden was too good a courtier to speak with impartiality of any part of this weak monarch's conduct. The castle of Perth stood near the red bridge, which terminated the narrow street called *Skinner-gate*. At the end of the Castle-street another narrow street leads W. to the Black-friars called *Courve seu roue*, where the curfew bell was. The kings of Scotland before James II. were crowned at Scone, and resided at Perth as the metropolis of the nation. The ancient kings of the Picts also often resided in it. James II. resided and was educated in the castle of Edinburgh, and was crowned there in 1437. The parliaments and courts of justice were removed from Perth to Edinburgh, but Perth kept its priority till 22 James III. 1482. The church in which the celebrated John Knox preached is still standing, and is now divided into three; named the *east*, the *middle*, and the *west* kirks. The east kirk is very handsomely modernised within. There is an old hospital, a considerable building, the founding of which is ascribed to James VI. The town-house shuts up the E. end of the High-street, on the W. bank of the Tay. A monastery of Carthusians was established by King James I. of Scotland, who lost his life on the spot, by the treachery of Athol and his accomplices. The king was buried in a very stately monument in this place, which was called *monasterium vallis virtutis*, one of the most magnificent buildings in the kingdom, which with others was destroyed by the populace. The only remains of the magnificent Carthusian priory are the carved stones with which the S.E. porch of St John's church is built, now greatly decayed. The king's garment full of stabs is still preserved here. The town was anciently provided with a stone bridge over the river, which an inundation swept away; but a new and very fine one was built between 1766 and 1771, reckoned the most beautiful structure of the kind in North Britain. (See BRIDGE, § 9, N° iii; and KINROUL, N° 3.) The flourishing state of Perth is owing to two accidents: 1. that many of Cromwell's wounded officers and soldiers chose to reside here, after he left the kingdom, who introduced a spirit of industry among

among the people; 2. the long continuance of the Earl of Mar's army here in 1715, which occasioned vast sums of money to be spent in the place. But this town, as well as all Scotland, dates its prosperity from the year 1748; the government of this part of Great Britain having never been settled till that time. Perth is a royal borough, and ad in dignity to the metropolis. It had a royal charter from king David I. who died in 1153, and which was renewed and confirmed by another from K. William I. in 1180, which is still extant. Its delegates join with those from Dundee, Forfar, Cupar of Fife, and St Andrews, in electing a representative in the British imperial parliament. It is governed by a provost, 4 bailies, (viz. 3 merchants and one tradesman), a dean of guild, treasurer, and 19 counsellors. Besides the old church above mentioned, which serves for three, it has an elegant chapel of ease, at the W. end of the High-Street, which is just finishing; also an elegant new episcopal chapel, elegant and capacious churches occupied by the Burgher and Antiburgher Seceders, and the Congregationalists; besides a neat meeting-house possessed by the Independents, Glas-ites or Sandemanians; and other smaller ones occupied by other sects of Independents, Scots Episcopals, Cameronians, Baptists, Relief-Church Presbyterians, Bereans, &c. There is also an Academy for Mathematics and other sciences, which has long had a high reputation; a public Library, and an Infirmary or Hospital, which was built in 1730, on the site of the old Carthusian Monastery, and is very well managed. A new set of schools are planned out and begun to be erected on the site of the old Blackfriars, a little N. of the Printing Office. Perth is greatly improved within these few years, by a number of new streets and elegant new buildings: particularly *George Street*, which leads to the bridge; *Charlotte Street*, which leads from George Street to the North Inch; the *Crescent*, an elegant row of new buildings in the form of a lunar crescent, W. from Charlotte Street; *Rose Terrace*, a new street running N. from the W. end of the Crescent; *Melburn Street*, leading N. from the New Chapel of Ease towards the Barracks, which are also to be numbered among the numerous modern improvements of Perth; which, from the additional plans at present in contemplation, seem to be but in their infancy. An entire New Town is intended to be built on the ground named, from being anciently occupied by, the *Black Friars*. They were a branch of Dominicans; their monastery was founded in 1231 by Alexander II: that of the Carmelites or *White Friars*, in the reign of Alexander III: the *Charter House* or *Carthusian Monastery*, in 1420, by James I; and that of the *Franciscans* or *Grey Friars*, by lord Oliphant in 1460; but all of them were abolished at the Reformation. The population of Perth is estimated at about 11,000 and is said to have increased one 3d since 1745. It has two weekly markets on Wed. and Friday, and 9 annual fairs in March, April, June, July, Aug. Sept. Oct. and two in Dec. Perth was famous for its trade, so early as the beginning of the 13th century. Alexander Neckham, an ancient English author, who died in 1227, mentions it in the following dish, quoted in Camden's *Britannia*:

"*Transis, ample Tay, per rura; per oppida, per PERTH:*

"*Regnum sustentans illius urbis opes.*"

Which is thus translated by Bp. Gibson, in his translation of Camden:

"Great TAY thro' PERTH, thro' towns, thro' country files;

"PERTH the whole kingdom with her wealth supplies."

But as we wish to give a more particular account of its present trade, manufacture, fisheries, &c. than has yet been laid before the public, we postpone it to the article TRADE. Perth is situated on the SW. bank of the Tay, 28 miles above its mouth; 40 W. of Edinburgh; 420 N. of London; 64 NE. of Glasgow; 238 NE. of Dublin; 53 SW. of Montrose; 82 SSW. of Aberdeen; and 23 W. of Dundee. Lon. 3. 27. W. Lat. 56. 22. N.

(4.) PERTH PROPER, a district in the above county, stretching 20 miles in length, and at some places 15 in breadth, is bounded on the NE. by the Carle of Gowrie; on the E. by Angus; on the W. by Strathern; on the N. by Athol; and on the S. by the Frith of Tay. This is a fruitful country, populous and well cultivated, abounding with gentlemen who possess opulent estates; with farmers who understand agriculture; and with manufacturers who turn their industry to great account.

PERTH AMBOY, a city of New Jersey, according to Dr Brooke, but, of New York, according to Mr Cruttwell, in the county of Middlesex; seated on a neck of land between the Rariton and Arthur Kill Sound. Both agree that it lies open to Sandy Hook, and has one of the best harbours in the United States; but Mr Cruttwell makes it 163 miles from New York, and 168 from Philadelphia; whereas Dr Brookes and J. Walker make it only 25 miles from New York. Lon. 74. 50. or 75. 0. W. Lat. 40. 35. N.

PERTHENSIS. *adj.* [mod. Lat.] Of or belonging to Perth.

(1.) PERTHES, a town of France, in the dep. of Seine and Marne; 6 miles SSW. of Melun.

(2.) PERTHES, a town of France, in the dep. of Upper Marne, 6 miles NW. of St Dizier.

PERTHSHIRE. See PERTH, N° 1.

PERTIGI, a town of Sardinia, 19 miles SE. of Castello Aragonese.

* PERTINACIOUS. *adj.* [from *perlinax*.] 1. Obstinate; stubborn; perversely resolute.—He had never met with a man of more *perlinacious* confidence and less abilities. *Walton*. 2. Resolute; constant; steady.—Diligence is a steady, constant, and *perlinacious* study. *South*.

* PERTINACIOUSLY. *adv.* [from *perlinacious*.] Obstinately; stubbornly.—They deny that freedom to me, which they *perlinaciously* challenge to themselves. *King Charles*.—Others have sought to ease themselves of all the evil of affliction by disputing subtilly against it, and *perlinaciously* maintaining that afflictions are no real evils, but only in imagination. *Tillotson*.—Metals *perlinaciously* resist all transmutation; and though one would think they were turned into a different substance, yet they do but as it were lurk under a vizard. *Ray*.

* PERTINACIOUSNESS. } *n. s.* [from *perlinacious*.]
* PERTINACITY. } Lat. from *perlinacious*.]

acious. 1. Obstinacy; stubbornness.—A very gross mistake, and if with *pertinacity* maintained, a capital error. *Brown.* 2. Resolution; constancy.

* **PERTINACY.** *n. f.* [from *pertinax*.] 1. Obstinacy; stubbornness; persistency.—Their *pertinacy* is such, that when you drive them out of one form, they assume another. *Duppa.*—It holds forth the *pertinacy* of ill fortune. *L'Esrange.* 2. Resolution; steadiness; constancy.—St Gorgonia prayed with passion and *pertinacy*, till she obtained relief. *Taylor.*

PERTINAX, an illustrious Roman emperor, who flourished about A. D. 170. He was descended of a mean family; and, like his father, who was either a slave or the son of a slave, he for some time followed the employment of making charcoal. His poverty did not, however, prevent him from receiving a liberal education. For some time he was employed in teaching the Greek and the Roman languages in Etruria. He next became a soldier, and by his valour rose to the highest offices in the army, and was made consul by M. Aurelius. He was afterwards made governor of Mœsia, and at length of Rome itself. When Commodus was murdered, Pertinax was universally chosen to succeed to the imperial dignity. He complied with reluctance; but his mildness, his economy and popularity, convinced the senate and people of the propriety of the choice. He forbade his name to be inscribed on any part of the imperial domains, insisting that they belonged not to him but to the public. He melted the silver statues which had been raised to Commodus, and sold all his concubines, horses, arms, and other instruments of his pleasure. With the money thus raised, he abolished all the taxes which Commodus had imposed. These patriotic actions gained him the affection of the worthiest of his subjects; but when he attempted to introduce among the pretorian guards proper discipline, the minds of the soldiers were totally alienated. Pertinax was apprized of their mutinying; but instead of flying, he boldly addressed them; and they had begun to retire, when one of the most seditious advanced and darted a javelin at his breast, exclaiming, *The soldiers send you this.* The rest followed the bloody example; and Pertinax, muffled up his head, and calling upon Jupiter to avenge his death, was immediately dispatched. This abominable murder happened A. D. 103. It was no sooner known, than the enraged populace flocked from all quarters, and uttering dreadful menaces against the authors of his death, ran up and down the streets in quest of them; but the senate had not the courage to avenge it. Such was the lamented end of Pertinax, after he had lived 66 years 7 months and 23 days; and reigned, according to Dio Cassius, only 87 days. His remains were interred with great pomp by Didius Julianus, his successor. Septimius Severus, assumed the name of *Pertinax*, and punished with great severity all who had been accessory to his death; disbanded the pretorian guards, pronounced his panegyric, and caused him to be ranked among the gods, appointing his son chief priest. The day of his accession and his birthday were celebrated for many years after.

VOL. XVII. PART I.

* **PERTINENCE.** *n. f.* [from *pertinax*, Lat.]
* **PERTINENCY.** } Justness of relation to the matter in hand; propriety to the purpose; apposition.—I have shewn the fitness and *pertinency* of the apostle's discourse. *Bentley.*

(1.) * **PERTINENT.** *adj.* [pertinens, Lat. *pertinent*, Fr.] Related to the matter in hand; just to the purpose; not useless to the end proposed; apposite; not foreign from the thing intended.—

My caution was more *pertinent*
Than the rebuke you give it. *Shak.*

—I set down what I thought *pertinent* to this business. *Bacon.*—Here I shall seem a little to digress, but you will by and by find it *pertinent*. *Bacon.*—He could find *pertinent* treatises of it in books. *Locke.* 2. Relating; regarding; concerning. In this sense the word now used is *pertaining*.—Men shall have just cause, when any thing *pertinent* unto faith and religion is doubted of. *Hooker.*

(2.) **PERTINENT OF LANDS**, in Scots law. See *LAW*, Part III, Chap. II, Sect. III.

* **PERTINENTLY.** *adv.* [from *pertinent*.] Appositely; to the purpose.—Be modest in the presence of thy betters, speaking little, answering *pertinently*. *Taylor.*

* **PERTINENTNESS.** *n. f.* [from *pertinent*.] Appositeness. *Diß.*

* **PERTINGENT.** *adv.* [pertingens, Latin.] Reaching to; touching. *Diß.*

* **PERTLY.** *adv.* [from *pert*.] 1. Briskly; smartly.—The first are *pertly* in the wrong. 2. Saucily; petulantly.—

Yonder walls, that *pertly* front your town. *Shak.*

When you *pertly* raise your snout,
This, among Hibernian asses,
For sheer wit and humour passes. *Swift.*

* **PERTNESS.** *n. f.* [from *pert*.] 1. Brisk folly; sauciness; petulance.—

Dulness delighted ey'd the lively dunce,
Rememb'ring the herself was *pertness* once. *Pope.*
2. Petty liveness; spriteliness without force, dignity, or solidity.—There is in Shaftesbury's works a lively *pertness*, and a parade of literature. *Watts.*

* **PERTANSIENT.** *adj.* [pertransiens, Latin.] Passing over. *Diß.*

(1.) **PERTUIS**, a town of France, in the department of the Mouths of the Rhone, and late province of Provence, near the Durance, 9 miles N. of Aix, 12 SSE. of Apt, and 27 N. of Marfeilles. Lon. 5. 36. E. Lat. 43. 44. N.

(2.) **PERTUIS BRETON**, a narrow strait of the sea, between the coast of France and the isle of Ré.

(3.) **PERTUIS D'ANTIOCH**, a strait between the isles of Oleron and Ré.

(4.) **PERTUIS DE MAUMUSSON**, a strait between the coast of France and the isle of Oleron, about $\frac{1}{2}$ of a league.

* **TO PERTURB.** } *v. a.* [perturbo, Lat.]
* **TO PERTURBATE.** } 1. To disquiet; to deprive of tranquillity.—

Rest, rest, *perturbed* spirit. *Shak.*
His *perturbed* soul within him mourns. *Sandys.*

2. To disorder; to confuse; to put out of regularity.—They are content to suffer, rather than *perturb* the public peace. *King Charles.*—Sententiality *perturbing* the reasonable commands of virtue. *Brown.*—The accession or secession of bodies from the

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the earth's face *perturb* not the equilibration of either hemisphere. *Brown*.

* **PERTURBATION.** *n. f.* [*perturbatio*, Lat. *perturbation*, Fr.] 1. Disquiet of mind; deprivation of tranquillity.

Shame, and *perturbation*, and despair. *Milton*.
—The foul doth manifest all its passions and *perturbations*. *Ray*. 2. Restlessness of passions.—Natures, that have much heat, and great and violent desires and *perturbations*, are not ripe for action, till they have passed the meridian. *Bacon*. 3. Disturbance; disorder; confusion; commotion.—They did ever hang over the kingdom, ready to break forth into new *perturbations* and calamities. *Bacon*. 4. Cause of disquiet.—

O polish'd *perturbation*! golden care! *Shak*.
5. Commotion of passions.—

Without *perturbation*, hear me speak. *B. Jonson*.
* **PERTURBATOIR.** *n. f.* [*perturbator*, Lat. *perturbateur*, Fr.] Raifer of commotions.

* **PERTUSED.** *adj.* [*pertusus*, Latin.] Bored; punched; pierced with holes.

* **PERTUSION.** *n. f.* [from *pertusus*, Latin.] 1. The act of piercing or punching.—The manner of opening a vein in Hippocrates's time was by stabbing or *pertusion*, as it is performed on horses. *Arbuthnot*. 2. Hole made by punching or piercing.—An empty pot without earth in it, may be put over a fruit the better, if some few *pertusions* be made in the pot. *Bacon*.

PERTUSIS. *n. f.* [Latin.] Chincough. See **MEDICINE, Index**.

(1.) **PERU**, a country of South America, bounded on the N. by Popayan, E. by Amazonia, S. by Chili, and W. by the Pacific ocean; extending from 1° 40' N. to 26° 10' S. Lat. and between 56° and 81° Lon. W. being about 1800 miles long; but its greatest breadth not exceeding 390.

(2.) **PERU, BALSAM OF.** See **MYROXYLON**.

(3.) **PERU, DISCOVERY OF.** This country was discovered by the Spaniards, and the first intelligence they had of it was from Nunez de Balboa, who had been raised to the government of Santa Maria in Darien, and who accidentally learned from a young cacique, that there was a country abounding with gold about 6 days journey to the S. Balboa set out on the 1st day of September 1513, about the time that the periodical rains began to abate. He had only 190 Spaniards along with him; but all of them were hardy veterans, inured to the climate of America, and very much attached to their leader: 1000 Indians attended to carry their provisions and other necessities; and they had along with them some fierce dogs. After a most painful journey of 25 days, he arrived at the South Sea; when he went into it up to the middle, and took possession of the ocean in name of the king of Spain. That part of the South Sea, he called the *Gulf of St Michael*; which name it still retains, and is situated E. of Panama. From some of the caciques he extorted provisions and gold; others sent him presents voluntarily. He led back his followers to Santa Maria, to refresh them after their fatigues; and sent an account to the court of Spain of the important discovery he had made, demanding 1000 men to conquer the country he had newly discovered. But here his hopes were blasted,

the king appointing Pedrarias Davila to supersede him, with the command of 15 stout vessels, and 1200 soldiers. Balboa submitted to the king's pleasure, yet the new governor tried him for some pretended irregularities committed before his arrival, and fined him of almost all he was worth. In the mean time, the Spaniards, paying no regard to the treaties concluded by Balboa with the Indians, plundered and destroyed all indiscriminately, from the gulph of Darien to lake Nicaragua. The new comers had also arrived about the middle of the wet season, when the excessive rains produced the most fatal diseases. To this was joined an extreme scarcity of provisions; so that in a month above 600 Spaniards perished. Balboa sent remonstrances to Spain against the new governor; on which the king appointed Balboa lieutenant-governor of the countries of the South Sea, with very extensive authority; enjoining Pedrarias to support him in all his enterprises, and to consult with him in every thing which he himself undertook. But though a reconciliation took place in appearance, so far, that Pedrarias agreed to give his daughter in marriage to Balboa, yet he soon after had him condemned and executed on pretence of disloyalty. On the death of Balboa, farther discoveries were laid aside for some time; but there were three persons at Panama who determined to go in quest of this country. These were Francis Pizarro, Diego de Almagro, and Hernand Luque. Pizarro and Almagro were soldiers of fortune, and Luque was an ecclesiastic, who acted both as priest and schoolmaster at Panama. Their confederacy was authorised by Pedrarias; and each engaged to employ his whole fortune in the adventure. Pizarro, being the least wealthy, engaged to take upon himself the greatest share of the fatigue and danger, and to command the armament which was to go first upon the discovery. Almagro offered to conduct the supplies of provisions and reinforcements of troops; and Luque was to remain at Panama, to superintend whatever was carrying on for the general interest. In 1524, Pizarro set sail from Panama with a single vessel of small burthen, and 112 men; in the most improper season of the whole year, the periodical winds, which were then set in, being directly opposite. The consequence was, that, after beating about for 70 days, with much danger and fatigue, he had advanced scarce as far to the SE. as a skillful navigator will now make in three days. He touched at several places of Terra Firma, and at the Pearl Islands, where he was found by Almagro, who had set out in quest of him with a reinforcement of 70 men, and had suffered similar distresses, besides losing an eye in a combat with the Indians. But the country of Popayan, showing a better aspect, and the inhabitants more friendly, they determined not to abandon their scheme. Almagro returned to Panama, but the bad accounts of the service gave his countrymen such an unfavourable idea of it, that Almagro could levy only 80 men. The disasters and disappointments they met with, in this new attempt, were scarce inferior to those they had already experienced, when part of the armament at last reached the bay of St Matthew on the coast of Quito, and

and landed at Tacamez, where they met with a more fertile and champaign country than any they had yet seen; the natives also being more civilized, and clothed in cotton or woollen stuffs, adorned with gold and silver. But some of the adventurers had informed their friends of their many dangers and losses, which weighed so much with Peter de los Rios, the successor of Pedrarias, that he prohibited the raising of new recruits, and even dispatched a vessel to bring home Pizarro and his companions from the island of Gallo. Almagro and Luque advised Pizarro not to relinquish an enterprise on which they had built all their hopes. He therefore refused to obey the governor's orders, and intreated his men not to abandon him. But the calamities to which they had been exposed had such an effect, that when he drew a line upon the sand with his sword, telling such as wished to return, that they might pass over it, only 13 remained with him. Pizarro with his little troop now fixed their residence on the island of Gorgona, where they continued 5 months, in the most unwholesome climate imaginable, when a vessel arrived from Panama, in consequence of the solicitations of Almagro and Luque; who had prevailed on the governor to send a small vessel to their relief. They therefore sailed to the SE. and in 20 days discovered the coast of Peru. They arrived at Tumbez, remarkable for its stately temple, and a palace of the Incas or sovereigns of the country. Here they found the reports concerning the riches of the country were true; not only ornaments and sacred vessels being made of gold and silver, but even such as were for common use. Yet to attempt the conquest of this opulent empire with their slender force, would have been madness; they contented themselves with viewing it, procuring two of the beasts called *Llamas*, some vessels of gold and silver, and two young men, whom they instructed in the Castilian language. With these, Pizarro arrived at Panama in 1527.

(4.) PERU, HISTORY OF, TILL THE MURDER OF ATABALIPA. The empire of Peru is said to have been originally possessed by independent tribes, reckoned among the most savage in America; living more like wild beasts than men. For several ages they lived in this manner; when there appeared on the banks of a lake called *Titiaca*, a man and woman of majestic form, and clothed in decent garments. They declared themselves to be the children of the sun, sent by their beneficent parent to instruct and reclaim mankind. The names of these extraordinary personages were *Manco Capac*, and *Mama Ocla*. At their persuasion, several of the dispersed savages united, and receiving their commands as heavenly injunctions, followed them to Cuzco, where they settled, and began to build a city. Manco Capac instructed the men in all the useful arts; while *Mama Ocla* taught the women to spin and weave; after which Manco framed a code of laws for his new state. Thus, according to the Indian tradition, was founded the empire of the Incas, or lords of Peru. At first its extent was small, reaching not above 8 leagues from Cuzco. Within these limits, however, Manco exercised the most perfect despotism, and the same was maintained by his suc-

cessors, all of whom were not only obeyed as monarchs, but revered as deities. Their blood was held to be sacred, and, by prohibiting intermarriages with the people, was never contaminated. The family thus separated from the rest of the nation, was distinguished by peculiarities in dress and ornaments, which it was unlawful for others to assume. When the Spaniards first visited this country, they found it agitated by a civil war. Huana Capac, the 12th monarch from the founder, was on the throne; a prince no less conspicuous for his abilities in war than for his pacific virtues. By him the kingdom of Quito was subdued, which almost doubled the extent of the Peruvian empire. Huana married the daughter of the conquered monarch, by whom he had a son named *Atabalupa*, or *Atabalipa*, to whom, at his death in 1529, he left the kingdom of Quito, bestowing the rest of his dominions upon Huascar, his eldest son, by a mother of the royal race. This produced a civil war, in which Atabalipa proved victorious, and afterwards, to secure himself on the throne, put to death all the descendants of Manco; but he spared the life of his rival Huascar, who was taken prisoner, that, by issuing orders in his name, he might establish his own authority. This contest had so much engaged the attention of the Peruvians, that they never attempted to check the progress of the Spaniards. The first intelligence Pizarro received of it, was a message from Huascar, asking his assistance against Atabalipa. Pizarro therefore determined to push forward, while intestine discord put it out of the power of the Peruvians to attack him with their whole force. Leaving a garrison in St Michael, he began his march with only 62 horsemen, and 102 foot. He proceeded to Caxamalca, where Atabalipa was encamped, and was met by an officer with a valuable present from the Inca, accompanied with a proffer of his alliance. Pizarro pretended to come as the ambassador of a very powerful monarch, who wished to aid him against his enemies. As the object of the Spaniards in entering their country was altogether incomprehensible to the Peruvians, they had formed various conjectures concerning it, whether their new guests were beings of a superior nature, who had visited them from some beneficent motives, or formidable avengers of their crimes, and enemies to their repose and liberty. Pizarro's declarations of his pacific intentions, removed all the Inca's fears. The Spaniards were thus allowed to march across the sandy desert between St Michael and Motupe, and through a defile in the mountains so narrow and inaccessible that a few men might have defended it. As they approached to Caxamalca, Atabalipa sent them presents of still greater value. On entering Caxamalca, Pizarro took possession of a large court, on one side of which was a palace of the Inca, and on the other, a temple of the sun, surrounded with a strong rampart. When he had posted his troops in this advantageous station, he dispatched Hernando Soto, and his brother Ferdinand, to the camp of Atabalipa, to desire an interview with the Inca. They were treated with all the respectful hospitality usual among the Peruvians; and Atabalipa promised to visit the Spanish

commander next day in his quarters. The decent deportment of the Peruvian monarch, the order of his court, and the reverence with which his subjects obeyed his commands, astonished the Spaniards. But their eyes were more powerfully attracted by the vast profusion of wealth which they observed in his camp. On their return to Caxamalca, they gave such a description of it to their countrymen, as confirmed Pizarro in a resolution which he had already taken, as daring as it was perfidious. He determined to avail himself of Atabalipa's unsuspicious simplicity, and to seize his person during the interview. He divided his cavalry into 3 squadrons, under his brothers Ferdinand, Soto, and Benalcázar; his infantry was formed into one body, except 20 of most tried courage, whom he kept near his own person; the artillery, consisting of two field-pieces, and the cross-bow men, were placed opposite to the avenue by which Atabalipa was to approach. Early in the morning, the Peruvian camp was all in motion. But as Atabalipa was solicitous to appear with the greatest splendour and magnificence in his first interview with the strangers, the preparations were so tedious, that the day was far advanced before he began his march. At length the Inca approached. First of all appeared 400 men in an uniform dress, as harbingers. He himself, sitting on a throne, almost covered with gold, silver, and precious stones, was carried on the shoulders of his principal attendants. Behind him came his chief officers. Several bands of fingers and dancers accompanied this cavalcade; and the whole plain was covered with troops, amounting to above 30,000 men. As the Inca drew near the Spanish quarters, father Vincent Valverde, chaplain to the expedition, advanced with a crucifix in one hand, and a breviary in the other, and in a long discourse explained to him the doctrine of the creation, the fall of Adam, the incarnation, the sufferings and resurrection of Jesus Christ, the appointment of St Peter as God's viceregent on earth, the transmission of his apostolical power by succession to the popes, the donation made to the king of Castile by pope Alexander of all the regions in the New World; and required Atabalipa to embrace the Christian faith, to acknowledge the jurisdiction of the pope, and to submit to the king of Castile as his lawful sovereign; promising, if he complied, that the Castilian monarch would protect his dominions, and permit him to continue in his royal authority; but if he should impiously refuse to obey this summons, he denounced war against him in his master's name, and threatened him with the most dreadful effects of his vengeance. This strange harangue, unfolding deep mysteries, and alluding to unknown facts, of which no power of eloquence could have conveyed a distinct idea to an American, was so lamely translated by an unskilful interpreter, that it was incomprehensible to Atabalipa. But some parts in it, of obvious meaning, filled him with astonishment and indignation. His reply, however, was temperate. He said that he was lord of his own dominions by hereditary right; that he could not conceive how a foreign priest should pretend to dispose of territories which did not belong to

him: that he, being the rightful possessor, refused to confirm it; that he would not forsake the service of the Sun, the immortal divinity whom he revered, to worship the God of the Spaniards, who was subject to death; that with respect to other matters, as he had never heard of them before, he desired to know where he had learned things so extraordinary. "In this book," answered Valverde, reaching out to him his breviary. The Inca opened it, and turning over the leaves, lifted it to his ear: "This," says he, "is silent; it tells me nothing;" and threw it with disdain to the ground. The enraged monk, running to his countrymen, cried out, "To arms, Christians, to arms! the word of God is insulted! avenge this profanation on these impious dogs." Pizarro immediately gave the signal of assault. At once the martial music struck up, the cannon and muskets began to fire, the horse sallied out fiercely, the infantry rushed on sword in hand. The Peruvians, astonished at the unexpected attack, fled with universal consternation, without attempting to defend themselves. Pizarro, at the head of his chosen band, advanced directly towards the Inca; and though his nobles crowded around him with zeal, and fell in numbers at his feet, the Spaniards soon penetrated to the royal seat; and Pizarro seizing the Inca by the arm, dragged him to the ground, and carried him a prisoner to his quarters. The fate of the monarch increased the precipitate flight of his followers. The Spaniards pursued them towards every quarter, and, with deliberate and unrelenting barbarity, continued to slaughter the wretched unfisting fugitives. Above 4000 Peruvians were killed. Not a single Spaniard fell, nor was one wounded but Pizarro himself slightly. The plunder taken was immense, but the Spaniards were still unsatisfied; which being observed by the Inca, he endeavoured to apply himself to their ruling passion, avarice, to obtain his liberty; and therefore offered such a ransom as quite astonished them. The apartment in which he was confined was 22 feet in length, and 16 in breadth; and all this space he engaged to fill with vessels of gold as high as he could reach. This proposal was eagerly caught by Pizarro, and a line was drawn upon the walls to mark the stipulated height. Atabalipa, anxious for his liberty, immediately dispatched messengers into all parts of the empire, to collect the immense quantity of gold which he had promised; and though the unfortunate monarch was now in the hands of his enemies, such was the veneration which his subjects had for him, that his orders were obeyed with as great alacrity as if he had been at full liberty. In a short time Pizarro received intelligence that Almagro was arrived at St Michael with a reinforcement. This was a matter of no small vexation to Atabalipa, who now considered his kingdom as in danger of being totally overrun by these strangers. For this reason he ordered to put his brother Huáscar to death, lest he should join against him. In the mean time, the Indians daily arrived at Caxamalca with vast quantities of treasure; the sight of which so much inflamed the Spaniards, that they insisted upon an immediate division: and this being complied with,

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there fell to the share of each horseman 8000 pesos, worth as many pounds sterling, and half as much to each foot soldier, Pizarro and his officers receiving shares proportionable to their dignity. A fifth part was reserved for the emperor, together with some vessels of curious workmanship. After this, Atabalipa was very importunate with Pizarro to recover his liberty; but the Spaniard, with unparalleled treachery and cruelty, had now determined to put him to death. But, to give some show of justice to this detestable action, Pizarro instituted a court of judicature for trying him. He appointed himself and Almagro, with two assistants, as judges; an attorney-general to carry on the prosecution in the king's name; counsellors to assist the prisoner in his defence; and clerks to record the proceedings. Before this strange tribunal, a charge was exhibited still more amazing. That Atabalipa, though a bastard, had usurped the regal power; that he had put his brother and lawful sovereign to death; that he was an idolater, and had offered up human sacrifices; that he had a great number of concubines, &c. On these heads they proceeded to try the sovereign of a great empire, over whom they had no jurisdiction. To all these charges the Inca pleaded not guilty. He called heaven and earth to witness the integrity of his conduct, and how faithfully he had performed his engagements, and the perfidy of his accusers. He desired to be sent over to Spain, to take his trial before the emperor; but no regard was paid to his intreaties. He was condemned to be burnt alive; which cruel sentence was mitigated to strangling; and the unhappy monarch was executed without mercy. Hideous cries were set up by his women as the funeral procession passed by their apartment; many offered to bury themselves alive with him; and on being hindered, strangled themselves out of grief. The whole town of Caxamalca was filled with lamentations, which quickly extended over the whole kingdom.

(5.) PERU, HISTORY OF, TO ITS FINAL SUBJECTION BY THE SPANIARDS. The murder of Atabalipa did no service to the Spaniards. Friends and enemies accused them of inhumanity and treachery. Loads of gold that were coming to Caxamalca by order of the deceased Inca were now stopped; which was the first unfortunate consequence of their late iniquitous conduct. The two factions of Indians united against Pizarro; and many of the Spaniards not only exclaimed against the cruelty of the judges, but would even have mutinied, had not a sense of the impending danger kept them quiet. At Cuzco the friends of Huascar proclaimed Manco Capac the legitimate brother of the late Inca. Pizarro set up Taparipa, the son of Atabalipa, as emperor. Immediately he set out for Cuzco. An army of Indians opposed his progress, but the Spanish cavalry bore down every thing before them. The conquerors gained a great booty; and Pizarro dispatched Almagro to reduce Cuzco, while he himself founded a new colony in Xauna. Ferdinand Soto was detached with 60 horse to Cuzco, to clear the road for the remainder of the army. Meantime Taparipa died; and as the Spaniards set up no

person in his room, the title of Manco Capac was universally acknowledged. A new supply of soldiers arriving from Spain, Benalcázar, governor of St Michael, undertook an expedition against Quito, where Atabalipa had left the greatest part of his treasure. He accomplished his purpose with difficulty, but found that the inhabitants had carried off all their gold and silver. About the same time Alvarado, governor of Guatemala, invaded Chili. In this expedition his troops endured such hardships, and suffered so much from the cold among the Andes, that a fifth part of the men and all the horses died, and the rest were so much dispirited and emaciated, that they became quite unfit for service. Alvarado then returned to his government, but most of his followers enlisted under Pizarro. In the mean time Ferdinand Pizarro had landed in Spain, where he produced such immense quantities of gold and silver as quite astonished the court. The general's authority was confirmed with new powers; Almagro had the title of governor conferred upon him, with jurisdiction over 200 leagues of a country lying S. of the province allotted to Pizarro. Pizarro then settled the internal policy of his province, and removed the seat of government from Cuzco to Lima. Meantime Almagro had set out on his expedition to Chili. (See CHILI, § 2.) Pizarro encouraged his most distinguished officers to invade those provinces which had not yet been visited by the Spaniards. No sooner did Manco Capac perceive the Spaniards thus dividing their forces, than he seized the opportunity of making one vigorous effort to redress the wrongs of his countrymen, and expel the cruel invaders. Though strictly guarded by the Spaniards, he found means to communicate his intentions to the chief men of his nation, whom he joined in 1536, under pretence of celebrating a festival which he had obtained liberty from Pizarro to attend. Upon this an army of 200,000 men collected. Many Spaniards were massacred, and several detachments cut off; and while this vast army laid siege to Cuzco, another formidable body invested Lima, and kept the governor shut up. The greatest effort, however, was made against Cuzco, which was defended by Pizarro and his two brothers, with only 170 men. The siege lasted 9 months; many Spaniards were killed; among whom was John Pizarro, the general's brother, and the best of them all. The rest were reduced to the most desperate situation, when Almagro appeared near Cuzco. He had now received the royal patent, creating him governor of Chili. On his arrival, his assistance was solicited by both parties. The Inca made many advantageous proposals; but at length attacked him in the night by surprise with a great body of chosen troops. But the Spanish valour and discipline prevailed, and the Peruvians were repulsed with such slaughter, that the remainder dispersed, and Almagro advanced to Cuzco. Pizarro's brother took measures to oppose his entrance; but while prudence refrained both parties from entering into a civil war, each leader endeavoured to corrupt the followers of his antagonist. In this Almagro had the advantage; and so many of Pizarro's troops deserted in the night, that Almagro was encouraged to advance towards the

the city, where he surprized the centinels; and investing the house where the two brothers were lodged, he compelled them, after an obstinate defence, to surrender; and Almagro's authority over Cuzco was immediately recognized. But Francis Pizarro, having dispersed the Peruvians who invested Lima, and received considerable reinforcements from other provinces, ordered 500 men, under Alonso de Alvarado, to march to Cuzco to relieve his brothers. Almagro attacked him by surprise, defeated and dispersed his army, taking himself and some of his principal officers prisoners. This victory seemed decisive; and Almagro was advised to make it so by putting to death Gonzalo and Ferdinand Pizarro, and Alvarado. This advice, however, he declined from humanity; and instead of marching directly against Pizarro, he retired to Cuzco, which gave his adversary time to recollect himself, and Almagro again suffered himself to be deceived by pretended offers of pacification. The negotiations were protracted for several months; Gonzalo Pizarro and Alvarado bribed the soldiers who guarded them, and escaped with 60 of Almagro's men. The general next proposed that all disputes should be submitted to their sovereign; and on this principle, Almagro released those whom Pizarro wanted; which he had no sooner done, than the latter set out for Cuzco with an army of 700 men, to which Almagro had only 500 to oppose; advanced without obstruction, and an engagement soon followed, in which Almagro was defeated and taken prisoner. The conquerors behaved with great cruelty, massacring a great number of officers. The Indians had assembled in great numbers to see the battle, with an intention to join the vanquished; but were so much overawed by the Spaniards, that they retired after the battle was over, and thus lost the only opportunity they ever had of expelling their tyrants.—Almagro was at length tried and condemned by Pizarro; and he was first strangled in prison, and then beheaded. He left one son by an Indian woman, whom he appointed his successor. As during these dissensions all intercourse with Spain ceased, it was some time before the accounts of the civil war were received at court. The first intelligence was given by some of Almagro's soldiers, who had left America on the ruin of their cause; and they did not fail to represent the injustice and violence of Pizarro in their proper colours, which strongly prejudiced the emperor against him. In a short time, however, Ferdinand Pizarro arrived, and endeavoured to give matters a new turn. The emperor was uncertain which of them to believe, but resolved to send over one he could trust to investigate the matter. Meantime, Ferdinand was arrested at Madrid, and confined to prison, where he remained 30 years. The person nominated to this important trust was Christopher Vaca Di Castro. While Di Castro was preparing for his voyage, Pizarro, considering himself as the unsullied master of Peru, proceeded to parcel out its territories among the conquerors; and had this division been made with any degree of impartiality, the extent of country which he had to bestow was sufficient to have gratified his friends, and to have gained his enemies. But Pizarro conducted

this transaction with the illiberal spirit of a party-leader. Large districts, in parts of the country most cultivated and populous, were set apart as his own property, or granted to his brothers, his adherents, and favourites. To others, lots less valuable and inviting were assigned. The followers of Almagro, amongst whom were many of the original adventurers to whose valour Pizarro was indebted for his success, were totally excluded. They therefore murmured in secret, and meditated revenge. Rapid as the progress of the Spaniards in South America had been since Pizarro landed in Peru, their avidity of dominion was not yet satiated. The officers to whom Ferdinand Pizarro gave the command of different detachments, penetrated into several new provinces; and though exposed to great hardships in the cold regions of the Andes, and amidst the woods and marshes, they made considerable discoveries and conquests. Peter de Valdivia re-assumed Almagro's scheme of invading Chili; and made such progress in the conquest of the country, that he founded the city of St Jago. But the enterprise of Gonzales Pizarro was the most remarkable. He set out from Quito at the head of 340 soldiers, near one half of whom were horsemen, with 4000 Indians. Excess of cold and fatigue proved fatal to the greater part of these last. The Spaniards, though more robust, suffered considerably; but when they descended into the low country, their distress increased. During two months, it rained incessantly, without any interval of fair weather to dry their clothes. The vast plains upon which they were now entering, either without inhabitants, or occupied by the rudest and least industrious tribes in the New World, yielded little subsistence. They could not advance a step but through woods or marshes. Such incessant toil, and scarcity of food, would have dispirited any troops. But the fortitude and perseverance of the Spaniards were insuperable. They persisted in struggling on, until they reached the banks of the Napo, one of the large rivers which run into the Maragnon. There, with infinite labour, they built a bark, which was manned with 50 soldiers, under Francis Orellana. The stream carried them down with such rapidity that they were soon far a-head of their countrymen, who followed slowly by land. At this distance from his commander, ORELLANA formed the scheme of distinguishing himself, by following the course of the Maragnon until it joined the ocean, and by surveying the vast regions through which it flows. This scheme was as bold as it was treacherous. For, if he violated his duty to his commander, and abandoned his fellow-soldiers in a pathless desert, his crime is somewhat balanced by the glory of having ventured upon a navigation of near 2000 leagues, through unknown nations, in a vessel hastily constructed with green timber, and by very unskilful hands, without provisions, without a compass, or a pilot. But his courage and alacrity supplied every defect. Committing himself fearlessly to the guidance of the stream, the Napo bore him along to the S. until he reached the great channel of the Maragnon. He sometimes seized by force the provisions of the fierce savages seated on its banks, and sometimes procured a supply of food by a friendly inter-

course.

course. After a long series of dangers and distresses, which he encountered with amazing magnanimity, he reached the ocean, where new perils awaited him. These he likewise surmounted, and got safe to the Spanish settlements in the island Cuzco; whence he failed to Spain. The vanity natural to travellers who visit regions unknown to the rest of mankind, prompted him to mingle an extraordinary proportion of the marvellous in the narrative of his voyage. He pretended to have discovered nations so rich, that the roofs of their temples were covered with plates of gold; and described a republic of Amazons so warlike and powerful, as to have extended their dominion over a considerable tract of the fertile plains which he had visited; fables hardly yet exploded. The voyage, however, deserves to be recorded, not only as one of the most memorable occurrences in that adventurous age, but as the first event that led to any certain knowledge of those immense regions that stretch E. from the Andes to the ocean. No words can describe the consternation of Pizarro, when he did not find the bark at the confluence of the Napo and Maragnon, where he had ordered Orellana to wait for him. But imputing his absence from the place of rendezvous to some unknown accident, he advanced above 50 leagues along the banks of the Maragnon, expecting every moment to see the bark appear with a supply of provisions. At length he came up with an officer whom Orellana had left to perish in the desert, because he had remonstrated against his perfidy. From him he learned the extent of Orellana's crime; and his followers perceived at once their own desperate situation. The spirit of the stoutest hearted veteran sunk within him; and all demanded to be led back instantly. Pizarro was now 1200 miles from Quito; and in that long march the Spaniards encountered hardships greater than those they had endured in their progress outward. Hunger compelled them to feed on roots and berries, to eat all their dogs and horses, to devour the most loathsome reptiles, and even to gnaw the leather of their saddles and sword belts: 4000 Indians, and 220 Spaniards, perished in this wild and disastrous expedition, which continued near two years; and as 50 men were aboard the bark with Orellana, only 80 got back to Quito. These were naked like savages, and so emaciated with famine or worn out with fatigue, that they had more the appearance of spectres than of men. But Pizarro, on entering Quito, received accounts of a fatal event that threatened calamities more dreadful than those through which he had passed. From the time that his brother made the partial division of his conquests above mentioned, the adherents of Almagro no longer entertained any hope of bettering their condition. Great numbers in despair resorted to Lima, where the house of young Almagro was always open to them: and the slender portion of his father's fortune, which he enjoyed, was spent in affording them subsistence. The warm attachment with which every person who served under the elder Almagro devoted himself to his interests, was transferred to his son, who was now grown up to manhood, and possessed all the qualities which captivate the

affections of soldiers. Of a graceful appearance, dexterous at all martial exercises, bold, open, generous, he seemed to be formed for command; and the accomplishments he had acquired heightened the respect of his followers. The Almagrians, looking up to him as their head, were ready to undertake any thing for his advancement. Nor was affection for Almagro their only incentive; they were urged on by their own distresses. Many of them, destitute of common necessities, and weary of loitering away life, a burden to their chief, began to deliberate how they might be avenged on the author of all their misery. Their frequent cabals did not pass unobserved; and the governor was warned to be on his guard against men who meditated some desperate deed, and had resolution to execute it. But either from his native intrepidity, or from contempt of persons whose poverty rendered their machinations of little consequence, he disregarded the admonitions of his friends. This gave the Almagrians full leisure to digest and ripen their scheme; and John de Herrada, an officer of great abilities, who had the charge of Almagro's education, took the lead in their consultations. On Sunday, the 26th of June, at mid-day, Herrada, at the head of 18 of the most determined conspirators, sallied out of Almagro's house in armour; and drawing their swords, as they advanced hastily towards the governor's palace, cried out, "Long live the king, but let the tyrant die." Though Pizarro, was usually surrounded by a numerous train of attendants, yet as he was just risen from table, and most of his domestics had retired to their own apartments, the conspirators were at the bottom of the staircase, before a page in waiting could give the alarm. The governor, whom no form of danger could appal, starting up, called for arms, and commanded Francis de Chaves to make fast the door. But that officer running to the top of the staircase, wildly asked the conspirators what they meant? Instead of answering, they stabbed him to the heart, and burst into the hall. A few, drawing their swords, followed Pizarro into an inner apartment. The conspirators rushed forward after them. Pizarro, with no other arms than his sword and buckler, defended the entry, and, supported by his half-brother Alcantara and his friends, maintained the unequal contest with the vigour of a youthful combatant. But the armour of the conspirators protected them, while every thrust they made took effect. Alcantara fell dead at his brother's feet; his other defendants were mortally wounded; and the governor, no longer able to parry the many weapons furiously aimed at him, received a deadly thrust full in his throat, sunk, and expired. As soon as he was slain, the assassins ran out into the streets, and waving their bloody swords, proclaimed the death of the tyrant. Above 200 of their associates having joined them, they conducted young Almagro in solemn procession through the city; and assembling the magistrates and principal citizens, compelled them to acknowledge him as lawful successor to his father in his government. The palace of Pizarro, with the houses of his adherents, were pillaged by the soldiers. The new governor

marched

marched into the heart of the empire, to reduce such places as refused to acknowledge his authority. A multitude of ruffians joined him on his march. His army breathed nothing but vengeance and plunder: every thing gave way before it. If the military talents of the general had equalled the ardour of his troops, the war had ended here. Unhappily for Almagro, he had lost his conductor John de Herrada. His inexperience made him fall into the snares that were laid for him by Peter Alvarcas, who had put himself at the head of the opposite party. In the mean time, Vaca Di Castro, who had been sent from Europe to try the murderers of old Almagro, arrived at Peru. As he was appointed to assume the government in case Pizarro was no more, all who had not sold themselves to the tyrant, hastened to acknowledge him. Castro instantly led them against the enemy. The armies engaged at Chapas on the 16th Sept. 1542, and fought with inexpressible obstinacy. Victory decided in favour of Castro. Those among the rebels who were most guilty, dreading tortures, provoked the conquerors to murder them, crying out, *It was I who killed Pizarro*. Their chief was taken prisoner and died on the scaffold. While these scenes of horror were transacting in America, the Spaniards in Europe were employed in finding out expedients to terminate them; though no measures had been taken to prevent them. Peru had only been made subject to the audience of Panama, which was too remote. A supreme tribunal was established at Lima for the dispensation of justice, with authority to enforce and reward a due obedience to the laws. Blasco Nunez Vela, who presided in it as viceroy, arrived in 1544, attended by his subordinates in office, and found every thing in the most dreadful disorder. To put an end to these tumults which now subsisted, would have required a profound genius, and many other qualities which are seldom united. Nunez had none of these advantages. He indeed possessed probity, firmness, and ardour; but he had taken no pains to improve these gifts. With these virtues, which were almost defects in his situation, he began to fulfil his commission, without regard to places, persons, or circumstances. Contrary to the opinion of all intelligent persons, who wished that he should wait for fresh instructions from Europe, he published ordinances, which declared that the lands the conquerors had seized should not pass to their descendants, and which disqualified those who had taken part in the civil commotions. All the Peruvians who had been enslaved by monks, bishops, and persons belonging to the government, were declared free. Other tyrannical establishments also would soon have been proscribed; and the conquered people were on the eve of being sheltered under the protection of laws which would at least have tempered the rigours of the right of conquest, if even they had not entirely repaired the injustice of them; but the Spanish government was to be unfortunate even in the good it attempted to effect. A change so unexpected filled those with consternation who saw their fortunes thus wrested from them. From astonishment they proceeded to indignation, murmuring, and sedition. The viceroy was degraded, put in irons, and banished to a desert island, till

he could be conveyed to Spain. Gonzales Pizarro was then returned from his hazardous expedition, which had employed him long enough to prevent him from taking a part in those revolutions which had so rapidly succeeded each other. The anarchy he found prevailing at his return, inspired him with the idea of seizing the supreme authority. His fame and his forces made it impossible that this should be refused him; but his usurpation was marked with so many enormities, that Nunez was regretted. He was recalled from exile, and soon collected a sufficient number of forces to enable him to take the field. Civil commotions were then renewed with extreme fury by both parties. No quarter was asked or given on either side. The Indians took part in this as they had done in the preceding wars; some ranged themselves under the standard of the viceroy, others under the banners of Gonzales. From 15,000 to 20,000 of these unhappy wretches, who were scattered about in each army, dragged up the artillery, levelled the roads, carried the baggage, and destroyed one another. Their conquerors had taught them to be sanguinary. After a variety of advantages for a long time alternately obtained, fortune at length favoured the rebellion under the walls of Quito, in January, 1545; and Nunez with the greatest part of his men were massacred. Pizarro took the road of Lima, where they were deliberating on the ceremonies with which they should receive him. Gonzales contented himself with making his entrance on horseback, preceded by his lieutenant, who marched on foot. Four bishops and the magistrates accompanied him. The streets were strewn with flowers, and the air resounded with music. This homage totally turned the head of a man naturally haughty, and of confined ideas. Had Gonzales possessed both judgment and moderation, he might have rendered himself independent. The principal persons of his party wished it. Instead of this, he acted with blind cruelty, insatiable avarice, and unbounded pride. Even those whose interests were connected with those of the tyrant wished for a deliverer. Such a deliverer arrived from Europe in the person of Peter Di la Gasca. The squadron and the provinces of the mountains immediately declared for a person who was invested with a lawful authority to govern them. Those who had lived concealed in deserts, caverns, and forests, joined him. Gonzales met the royal army, and attacked it on the 9th June 1648. One of his lieutenants, seeing him abandoned at the first charge by his best soldiers, advised him to throw himself into the enemy's battalions, and perish like a Roman; but this weak man chose rather to surrender, and end his life on a scaffold. Carvajal, a more able warrior, and more ferocious than himself, was quartered. This man, when he was expiring, boasted that he had massacred with his own hand 1400 Spaniards and 20,000 Indians. Such was the last scene of a tragedy, of which every act had been marked with blood. The government was moderate enough not to continue the proscriptions; and the remembrance of the horrid calamities they had suffered kept the Spaniards in subjection. The commotion insensibly sunk into a
calm,

calm; and the country hath remained quiet ever since. With regard to the Peruvians, the most cruel measures were taken to render it impossible for them to rebel. Tupac Amaru, the heir of their last king, had taken refuge in some remote mountains, where he lived in peace. There he was so closely surrounded by the troops sent out against him, that he was forced to surrender. The viceroy Francis de Toledo caused him to be accused of several pretended crimes, and he was beheaded in 1571. All the other descendants of the Incas shared a similar fate. The horror of these enormities excited so universal an indignation both in the Old and the New World, that Philip II. disavowed them; but the infamous policy of this prince was so notorious, that no credit was given to this pretence to justice and humanity. Only one attempt has since been made by the Peruvians to recover their independence, and throw off the Spanish yoke. An Indian of the province of Xauxas, who boasted his descent from the ancient Incas, was proclaimed king in 1742. His countrymen, in the hopes of recovering their lands, their laws, their liberty and religion, flocked in crowds to his standard; but though at first successful, they were defeated and dispersed, after having made considerable progress.

(6.) PERU, INHABITANTS, DRESS, MANNERS, &c. IN. Peru abounds more in women than in men, and the women enjoy a better state of health, owing to the early intemperance of the men. The Creoles are well made, of a proper stature, and of a lively and agreeable countenance. The Mestizos are also in general well made, often taller than the ordinary size, and very robust. The Indians are commonly low of stature, though strong and well proportioned. Some are remarkably short. Their hair is thick and long, and worn loose; but the Indian women plait theirs behind with a ribbon, and cut that before above the eye brows. The greatest disgrace that can be offered to an Indian of either sex is to cut off their hair; any other punishment they bear with patience; but this they never forgive. The colour of the hair is a deep black; lank, harsh, and coarse as that of a horse. The male Mestizos, to distinguish themselves from the Indians, cut off their hair; but the females do not. The Mestizos wear a blue cloth, manufactured in this country. The Mestizo women affect to dress in the same manner as the Spanish. The dress of the Indians consists of white cotton drawers, down to the calf of the leg, loose, and edged with a lace. The shirt is supplied by a black cotton frock, in the form of a sack, with three openings one for the head, and 2 others for the arms. Over this is a serge cloak, and a hat. This is their general dress, which they never lay aside, even while they sleep. The Indians, who have acquired some fortune, particularly the barbers and phlebotomists, distinguish themselves from their countrymen by the fineness of their drawers, and a shirt with lace four or five fingers broad fastened round like a ruff or band. They wear silver or gold buckles in their shoes, though they wear no stockings; and have a cloak of fine cloth, often adorned with gold or silver lace. Rum and brandy are drank by persons of all ranks; but the excessive use of

spirituous liquors chiefly prevails among the Mestizos. Another liquor much used in this country is mate, which is made of an herb Paraguay. (See PARAGUAY, N^o 4.) Gaming is carried to an extravagant height. The common people and the Indians, are greatly addicted to stealing; but robberies are seldom heard of.

(7.) PERU, MINES OF. There are great numbers of very rich mines which the waters have invaded. The disposition of the ground, which from the summit of the Cordilleras goes continually shelving to the South Sea, renders such events more common at Peru than in other places. This has been in some instances remedied. Joseph Salcedo, about 1660, discovered near Puna, the mine of Laycacoto. It was so rich that they often cut the silver with a chisel. It was at last overflowed with water; but in 1740, Diego de Bacna associated with others to avert the springs. The labours which this difficult undertaking required were not finished till 1754. The mine yields as much now as it did at first. But mines still richer have been discovered. Such is that of Porosi, which was found in the same country where the Incas worked that of Porco. An Indian, named Hualpa, in 1545, pursuing some deer, in order to climb certain steep rocks, laid hold of a bush, the roots of which loosened from the earth, and brought to view an ingot of silver. The Indian had recourse to it for his own use. The change in his fortune was remarked by one of his countrymen, and he discovered to him the secret. The two friends could not keep their counsel and enjoy their good fortune. They quarrelled; on which the indiscreet confidant discovered the whole to his master, Villaroel, a Spaniard. Upon this the mine was worked; and a great number of others were found in its vicinity; the principal of which are in the northern part of the mountain, and their direction is from N. to S. The fame of Potosi soon spread abroad; and there was quickly built at the foot of the mountain a town consisting of 60,000 Indians and 10,000 Spaniards. The fertility of the soil did not prevent its being immediately peopled. Corn, fruit, flocks, American stuffs, European luxuries arrived from every quarter. In 1738 these mines produced annually near 978,000*l.* without reckoning the silver which was not registered, and what had been carried off by fraud. From that time the produce has been so much diminished, that not above $\frac{1}{4}$ th part of the coin which was formerly struck is now made. At all the mines of Peru, the Spaniards, in purifying their gold and silver, use mercury, with which they are supplied from Guanaca Velica. The common opinion is, that this mine was discovered in 1564. The trade of mercury was then still free: it became an exclusive trade in 1571. At this period all the mines of mercury were shut; and that of Guanaca Velica alone was worked; the property of which the king reserved to himself. It is not found to diminish. The mine is dug in the very large mountain of Porosi, 60 leagues from Lima. In its profound abyss are seen streets, squares, and a chapel, where the mysteries of religion on all festivals are celebrated. Millions of flambeaux are continually kept to enlighten it. The mine of Guanaca Velica generally affects those

who work in it with convulsions: and the other mines, which are not less unhealthy, are all worked by the Peruvians. These unfortunate victims of an insatiable avarice are crowded all together and plunged naked into these abysses, the greatest part of which are deep, and all excessively cold. Tyranny has invented this refinement in cruelty, to render it impossible for any thing to escape its restless vigilance. If there are any wretches who long survive such barbarity, it is the use of cocoa that preserves them.

(8.) PERU, MOUNTAINS, RIVERS, AND TOWNS OF. The principal mountains of Peru are the Andes, or Cordilleras. See ANDES, § 1—6. The chief rivers are the SANGAY, UPANO, *Payra Lasacunga*, TITICACA, &c. The principal cities are QUITO, Paita, Lima, Cusco, Potosi, Porco.

(9.) PERU, POPULATION OF. The population of Peru has not been ascertained with any precision. The city of Lima contains 54,000; Guayaquil, 20,000; Potosi, 25,000; Paz, 20,000, and Cusco, 26,000; in all 145,000; but these places are but a small part of the Peruvian empire.

(10.) PERU, PROVINCES, EXTENT, CLIMATE, &c. OF. This extensive empire is governed by a viceroy, and is divided into three large provinces or audiences, called QUITO, LIMA, or *Los Reyes*, and CHARCAS. (See these articles.) This empire, when it was subdued, extended along the S. Sea, from the river of Emeralds to Chili, and on the land-side to Popayan, according to some geographers. It contained within it that famous chain of mountains which rises in the Terra Magellanica, and is gradually lost in Mexico, where it unites the southern parts of America with the northern. The climate differs extremely in different parts of the country, though it lies all within the torrid zone. Some places are exceeding hot; others mild and temperate; others, particularly the tops of the CORDILLERAS, and other high mountains, are covered with eternal snow; while other mountains, covered also with snow, constantly throw out torrents of fire and smoke. In some places it never rains; in others the rains are excessive. Thunder storms are also exceedingly frequent in some places, while in others they are totally unknown. But no part of the globe is so often convulsed by the most dreadful of all natural phenomena, earthquakes. Nor is any part of the empire so frequently visited by them as Lima. (See LIMA.) In Feb. 1797, a dreadful earthquake happened, by which great numbers of people perished. In the provinces of Tanager, Amboto, Rio Bamba, Alaosi, and part of Quito and Chimbo, the houses were all levelled with the ground. The mountains shook with such violence, that they were dashed against each other, and the volcanos threw up burning lava, dust, stones, and water; and totally destroyed Capalpi, San-Andrea Ouan, Guanando, Emlyies, and many other places. At Sambagna and Timba, new rivers burst forth, and several lakes threw up flames. Yet in the whole of this empire, the climate is healthy; nor is their any malady peculiar to it; and most of the diseases of Europe are little known in it.

(11.) PERU, QUADRUPEDS, BIRDS, INSECTS, &c. OF. Black cattle, which were early introduced from Europe, now run wild and are hunted.

Goats have also thriven well; but European sheep have degenerated. There are three species of quadrupeds peculiar to Peru, viz. the *Lama*, the *vicuna* and *guanaco*. They are all three species of camels, though covered with wool, and hence called *camel-sheep*. The *Lama* is described under CAMELUS, N° 3, and the two latter are varieties of Pacos. See CAMELUS, N° 4. The natives make cloth of their wool, and they are of great service as beasts of burden, being very docile and easily kept. Their flesh is reckoned as good as mutton. The guanaco is useful in the mines, carrying metals on rugged roads, where no other beasts could go. There are also a few tigers, as large and fierce as those of Africa, and a species of wolf erroneously called a lion. Alligators also frequent the banks of the rivers. The most singular birds are the *gallinazo*, and the CONDOR, two different species of vultures. (See VULTUR.) The *gallinazo* is of great use in preventing the country from being over-run with alligators. They watch the female alligators, concealed among the branches of trees near the banks of rivers, and as soon as they have laid their eggs and retired, these birds dart down and devour them, tearing up such as are buried in the sand. The condor is the largest bird in this country, is very carnivorous and often flies off with lambs. The ZUMBADOR, or *hummer*, is a night bird peculiar to the mountains and deserts. They are seldom seen, but often heard, by their singing and humming noise in the air. The humming birds likewise abound, and are remarkable for their smallness of size, and the beautiful vivid colours of their feathers. See TROCHILUS. The TOUCAN is also peculiar to this country. See RHAMPHASTOS. The bats are of a monstrous size, and often suck the blood of horses. Serpents are numerous, particularly rattle snakes. Spiders and most other insects are larger than those of Europe. Earth worms are as long as a man's arm, and as thick as one's thumb.

(12.) PERU, RELIGION OF THE ANCIENT NATIVES OF. The Peruvians were taught by Manco to adore the Creator, whom they denominated *Paca Camac*, that intelligence which animated the world. They seldom built temples or offered sacrifices to him. One temple, however, dedicated to *The unknown God*, the Spaniards found at their arrival, erected in a valley, thence named the *valley of Paca Camac*. The sacrifices instituted in honour of the sun consisted chiefly of lambs; besides which they offered all sorts of cattle, fowls, and corn, and even burnt their finest cloths on the altar by way of incense. They had drink offerings made of maize, steeped in water. They also paid some kind of veneration to the images of several animals and vegetables that had a place in their temples. Besides the solemnities at every full moon, 4 grand festivals were celebrated annually. The first, called *Rajmi*, was held in June, not only in honour of the sun, but of their first Inca, Manca Capac, and Coya Mama Ocla, his wife and sister, whom the Incas considered as their first parents, descended immediately from the sun. At this festival, all the viceroys, generals, governors, and nobility, assembled at Cuzco; and the Inca officiated in person as high-priest; though on other occasions the regular pontiff, who was usually the

the uncle or brother of the Inca, officiated. On the morning of the festival, the Inca, accompanied by his near relations, in order of their seniority, went barefoot in procession, at day-break, to the market-place, where they remained looking attentively towards the east. The luminary no sooner appeared, than they fell prostrate on their faces in the most profound veneration, and acknowledged it to be their god and father. The vassal princes, and nobility, that were not of the blood royal, did the same in another square. The priests then offered a black lamb, in sacrifice, first turning its head towards the east. From the entrails of the victim they drew prognostics of peace and war, &c. The Peruvians believed in the immortality of the soul. The Incas taught them that, on leaving this world, they should enter into a state of happiness, provided for them by their god and father the sun.

(13.) PERU, SCIENCES AND ARTS IN. Before the arrival of the Spaniards in America, the Peruvians were acquainted with some points of astronomy. They had observed the various motions of the planet Venus, and the different phases of the moon. The people divided the year by the seasons; but the Incas, who had discovered the revolution of the sun, marked out the summer and winter solstices by high towers, which they erected on the E. and W. of Cuzco. When the sun rose directly opposite to 4 of those towers, on the E. side of the city, and set against those of the W. it was then the summer solstice; when it rose and set against the towers, it was the winter solstice. They had also erected marble pillars on the great court before the temple of the sun, by which they observed the equinoxes, under the equator, when the sun being verticle, the pillars cast no shade. At those times they crowned the pillars with garlands of flowers and odoriferous herbs, and celebrated a festival to the sun. They distinguished the months by the moon, and their weeks were called quarters of the moon; the days of the week they distinguished, as *first, second, &c.* When the sun was eclipsed, they concluded it was on account of their sins, imagining that this phenomenon portended famine, war, and pestilence, or some other terrible calamity. In a similar state of the moon, they apprehended that she was sick and dying. They had philosophers, who taught morals, cultivated poetry, and composed plays, which were acted before the king by the great men of the court, officers, &c. They were acquainted with painting and statuary, but in all the implements of mechanic arts they were extremely deficient. Though many goldsmiths were constantly employed, they had never invented an anvil of any metal, but used a hard stone, and beat their plate with round pieces of copper instead of hammers; nor had they any files or graving tools. Their carpenters had no other tools than hatchets of copper or flint; nor had they learned the use of iron; though the country affords mines of it. Their knives were also made of flint or copper.

(14.) PERU, SOIL AND PRODUCE OF. The fertility of the soil is incredible, for the fruits and flowers of all the seasons are visible at the same time; and while some herbs of the field are fading, others of the same kind are springing up; while

some flowers lose their beauty, others blow; when the fruits of the trees have attained their maturity, and the leaves begin to change their colour, fresh leaves blossom, and fruits are seen in their proper gradations in size and ripeness on the same tree. The same incessant fertility is conspicuous in the corn, both reaping and sowing being carried on at the same time: so that the declivities of the neighbouring hills exhibit all the beauties of the four seasons in one assemblage. Though all this is generally seen, yet there is a settled time for the grand harvest: yet sometimes the most favourable season for sowing in one place is a month or two after that of another, though their distance does not exceed 3 or 4 leagues. Thus in different spots, sowing and reaping are performed throughout the year, the forwardness or retardment arising from the different situations, and temperatures. The *chirimoya* is considered as one of the most delicious fruits in the world. Its dimensions are various, being from 1 to 3 inches in diameter. It is imperfectly round, flattened towards the stalk, but all the other parts are nearly circular. It is covered with a thin soft shell, which adheres so closely to the pulp as not to be separated from it without a knife. The outward coat is green, variegated with prominent veins, forming all over it a kind of net-work. The pulp is white, and contains a large quantity of juice resembling honey, of a sweet taste, mixed with a gentle acid of a most exquisite flavour. The seeds are formed in several parts of the pulp, and are somewhat flat. The tree is high and tufted, the stem large and round, but with some inequalities, full of elliptic leaves, terminating in a point. The blossom and leaves are a darkish green. It is remarkable for its incomparable fragrance. The *granadilla* resembles a hen's egg, but is larger. The outside of the shell is smooth, glossy, and of a faint carnation colour, and the inside white and soft. The shell contains a viscous liquid substance full of very small and delicate grains, less hard than those of the pomegranate. This medullary substance is separated from the shell by a fine and transparent membrane. Its fruit has a delightful sweetness blended with acidity, very cordial and refreshing, and so wholesome, that there is no danger of eating to excess. The *frutilla*, or Peruvian strawberry, is generally not above an inch in length, but much larger in some parts of Peru; but their taste, though juicy, and not unpalatable, is not equal to those in Europe. Wheat, barley, maize, potatoes, cassava, pimento, cotton, vines, olives, &c. are cultivated, and afford abundant produce.

(15.) PERU, TRADE AND MANUFACTURES OF. Commerce is chiefly carried on by Europeans, who are settled in Peru. The manufactures are chiefly cottons, white and striped baize and cloths. On the arrival of the galleons at Carthagena, these traders resort thither to purchase European goods, which on their return they disperse through the provinces. Iron and steel are imported from Europe, and large quantities of Indigo from Mexico; blue being the colour chiefly preferred, in apparel. With the wool of the vicuna, they make, at Cuzco, stockings, handkerchiefs, and scarfs. The same wool, mixed with that of the European sheep, serves for carpets and fine cloth. Inferior wool is

K k 2 manufactured

manufactured into ferges, druggets, &c. Gold and silver toys, laces, and embroideries are also made by the natives; the last chiefly by Peruvian girls, and Mestizos.

(16.) PERU, VOLCANOES OF. The principal volcanoes are SANGAY, *Cotopaxi*, PICHINCHA and TONGOURGUA. See these articles.

* To PERVADE. *v. a.* [*pervade*, Lat.] 1. To pass through an aperture; to permeate.—

The labour'd chyle *pervades* the pores. *Blackm.*
—Paper dipped in water or oil, and many other substances soaked in such liquors as will intimately *pervade* their little pores, become more transparent. *Newt.* 2. To pass through the whole extension. An immaterial self-active substance, that can penetrate and *pervade* it. *Bentley.*—

What but God,

Pervades, adjusts, and agitates the whole? *Thomf.*
* PERVASION. *n. f.* [from *pervade*.] the act of *pervading* or passing through.—Both those kinds of fluidity, ascribed to saltpetre, will appear to be caused by the *pervasion* of a foreign body. *Boyle.*

* PERVERSE. *adj.* [*pervers*, Fr. *perversus*, Lat.] 1. Distorted from the right.—

And nature breeds

Perverse, all monstrous, all prodigious things.

Milton.

2. Obstinate in the wrong; stubborn; untractable.

This was all thy care

To stand approved in sight of God, though worlds

Judg'd thee *perverse*. *Milton's Par. Lost.*

To so *perverse* a sex all grace is vain. *Dryd.*

3. Petulant; vexatious; peevish; desirous to cross and vex; cross.—

I'll frown and be *perverse*, and say thee nay,
So thou wilt wooe. *Shak.*

* PERVERSELY. *adv.* [from *perverse*.] With intent to vex; peevishly; vexatiously; spitefully; crossly; with petty malignity.—Men *perversely* take up piques and displeasures at others. *Decay of Piety.*—Men, that do not *perversely* use their words, seldom mistake the signification of the names of simple ideas. *Locke.*—

A patriot is a dangerous post,

When wanted by his country most,
Perversely comes in evil times. *Swift.*

* PERVERSENESS. *n. f.* [from *perverse*.] 1. Petulance; peevishness; spiteful crossness.—

Virtue hath some *perverse*ness; for she will
Neither believe her good, nor others ill, *Donne.*
Her whom he wishes most, shall seldom gain
Through her *perverse*ness. *Milt. Par. Lost.*

The *perverse*ness of my fate is such,
That he's not mine, because he's mine too much.
Dryden.

Conviction does but more incense;
*Perverse*ness is your whole defence. *Swift.*

Perversion; corruption. Not in use.—Neither can this be meant of evil governors or tyrants, but of some *perverse*ness and defection in the nation itself. *Bacon.*

* PERVERSION. *n. f.* [*perverſion*, Fr. from *perverse*.] The act of *perverting*; change to something worse.—Women to govern men, slaves freemen, are much in the same degree; all being total violations and *perversions* of the laws of nature and nations. *Bacon.*—The hopes of enjoying the

abbey lands would be an effectual incitement to their *perverſion*. *Swift.*

* PERVERSITY. *n. f.* [*perverſitè*, Fr. from *perverse*.] *Perverſenefs*; *crossnefs*.—

What strange *perverſity* is this of man! *Norris.*

* To PERVERT. *v. a.* [*perverto*, Lat. *pervertir*, Fr. 1. To distort from the true end or purpose.—Instead of good they may work ill, and *pervert* justice to extreme injustice. *Spenser's Ireland.*—If thou seeſt the oppression of the poor, and violent *perverting* of justice in a province, marvel not. *Ecclesi. v. 8.*—

If then his providence

Out of our evil seek to bring forth good,

Our labour must be to *pervert* that end,

And out of good still to find means of evil. *Milt.*

—He has *perverted* my meaning by his glosses. *Dryden.*—*Porphyry* has wrote a volume to explain this cave of the nymphs with more piety than judgment; and another person has *perverted* it into obscenity; and both allegorically. *Braome.*—We cannot charge any thing upon their nature, 'till we take care that it is not *perverted* by their education. *Law.* 2. To corrupt; to turn from the right; opposed to convert, which is to turn from the wrong to the right.—

He in the serpent had *perverted* Eve,

Her husband she, to taste the fatal fruit. *Milton.*

—The subtle practices of Eudoxius, bishop of Constantinople, in *perverting* and corrupting the most pious Emperor Valens. *Waterland.*

* PERVERTER. *n. f.* [from *pervert*.] 1. One that changes any thing from good to bad; a corrupter.—Where a child finds his own parents his *perverters*, he cannot be so properly born, as damned into the world. *South.* 2. One who distorts any thing from the right purpose.—He that reads a prohibition in a divine law, had need be well satisfied about the sense he gives it, lest he incur the wrath of God, and be found a *perverter* of his law. *Stillingfleet.*

* PERVERTIBLE. *adj.* [from *pervert*.] That may be easily *perverted*. *Ainsworth.*

(1.) PERUGIA, a handsome, large, ancient, and populous city of Italy, capital of *PERUGINO*; seated on a hill. It has a strong citadel, an university, 3 colleges, 3 academies, and a bishop's see. The churches, and many other buildings are very handsome. It is 60 miles N.E. of Florence, 75 N. of Rome. Lon. 12. 30. E. Lat. 43. 6. N.

(2.) PERUGIA, a lake of *Perugino*, 8 miles from the city, N° 1. It is almost round, being about 5 miles in diameter, and has 3 islands.

(1.) PERUGIANO or) a province of Italy,
(1.) PERUGINO, } one of the smallest in the territory of the church, bounded on the W. by Etruria; on the S. by Orvietano, and on the E. by the duchies of Spoleto and Urbino, on the N. by the county of Castellana. It is 25 miles long, and 24 broad. The air is very pure, and the soil fertile in corn and good wine. The capital is PERUGIA.

(2.) PERUGINO. See MONTANINI.

* PERVICACIOUS. *adj.* [*perviciax*, Latin.] Spitefully obstinate; peevishly contumacious.—May private devotions be efficacious upon the mind of one of the most *perviciacious* young creatures! *Clarissa.*—

Gondibert

Condidert was in fight audacious,
But in his ale most *pervicacious*.

Denham.

* **PERVICACIOUSLY**. *adv.* [from *pervicaci-*
ous.] With spiteful obstinacy.

* **PERVICACIOUSNESS**. *n. f.* [*pervicacia*,
Lat. from *pervica-*

* **PERVICACITY**. *n. f.* [*pervicacia*,
Lat. from *pervica-*

* **PERVICACY**. *n. f.* [*pervicacia*,
Lat. from *pervica-*

* **PERVIOUS**. *adj.* [*pervius*, Lat.] 1. Admit-
ting passage; capable of being permeated.—The
Egyptians used to say, that unknown darkness is
the first principle of the world; by darkness they
mean God, whose secrets are *pervious* to no eye.
Taylor.—

He to thickets fled,

Conceal'd from aiming spears, not *pervious* to
the flead. Dryden.

—Those lodged in our earth, more lax and *pervi-*
ous. Woodward. 2. *Pervading*; permeating. This
sense is not proper.—

What is this little, agile, *pervious* fire,
This flutt'ring motion which we call the mind?

* **PERVIOUSNESS**. *n. f.* [from *pervious*.] Qua-
lity of admitting a passage. The *perviousness* of our
receiver to a body much more subtle than air, pro-
ceeds partly from the looser texture of that glass
the receiver was made of, and partly from the
enormous heat, which opened the pores of the
glass. Boyle.—There will be found another differ-
ence besides that of *perviousness*. Holder's Elements.

PERVISSE, a town of France, in the depart-
ment of Lys, and late prov. of Austrian Flanders;
6 miles WNW. of Dixmude.

(1.) * **PERUKE**. *n. f.* [*peruque*, Fr.] A cap of
false hair; a periwig.—I put him on a linen cap,
and his *peruke* over that. Wifeman.

(2.) **PERUKE**. See **PERIWIG**, and **PERUKE**.

* **To PERUKE**. *v. a.* [from the noun.] To dress
in adjectitious hair.

* **PERUKEMAKER**. *n. f.* [*peruke* and *maker*.] A
maker of perukes; a wigmaker.

* **PERUSAL**. *n. f.* [from *peruse*.] The act of
reading.—This treatise requires application in the
perusal. Woodv.—If upon a new *perusal* you think
it is written in the very spirit of the ancients, it
deserves your care. Atterbury.

PERUSE, a town of France, in the department
of Charente; 9 miles S. of Confolent.

* **To PERUSE**. *v. a.* [*per* and *use*.] 1. To read.
Peruse this writing here. Shak. Rich. II.

—Set apart an hour in a day to *peruse* those peti-
tions. Bacon.—Observe whether he tastes the dis-
tinguishing perfections of the author whom he
peruses. Addis. Spect. 2. To observe; to examine.

I hear the enemy;
Out some light horsemen, and *peruse* their wings.

I've *perus'd* her well. Shak.

Myself I then *perus'd*, and limb by limb
Survey'd. Milt. Par. Lost.

* **PERUSER**. *n. f.* [from *peruse*.] A reader; ex-
aminer.—The difficulties and hesitations of every
one will be according to the capacity of each *per-*
user. Woodv.

PERUSIA, an ancient town of Etruria, on the
Tiber, built by Oenus; where L. Antonius was

besieged by Augustus, till he surrendered. (Strabo.)
It is now called **PERUGIA**.

PERUVELS, a town of France, in the dep. of
Jemappes, and ci-devant prov. of Austrian Hain-
ault, 5 miles N. of Condé.

(1.) **PERUVIAN**. *adj.* of or belonging to **PERU**.

(2.) **PERUVIAN BALSAM**. See **MYROXYLON**.

(3.) **PERUVIAN BARK**, or **JESUITS BARK**, the
Bark of the *Cinchona officinalis*, a well known
medicine. See **CINCHONA**, N° 3. The pale and
the red are chiefly used in Britain. The pale is
brought to us in pieces of different sizes, either
flat or quilled, and the powder is rather of a light-
er colour than that of cinnamon. The red is ge-
nerally in much larger, thicker, flattish pieces, but
sometimes also in the form of quills, and its pow-
der is reddish like that of Armenian bole. It is
much more resinous, and possesses the sensible
qualities of the cinchona in a much higher degree
than the other sorts; and the more nearly the
other kinds resemble the red bark, the better they
are now considered. The red bark is heavy, firm,
sound, and dry; friable between the teeth; does
not separate into fibres; and breaks, not shivery,
but short, close, and smooth. It has three layers;
the outer is thin, rugged, of a reddish brown col-
our, but frequently covered with mossy matter:
the middle is thicker, more compact, darker col-
oured, very resinous, brittle, and yields first to
the pestle: the innermost is more woody, fibrous,
and of a brighter red. The Peruvian bark yields
its virtues both to cold and boiling water; but the
decoction is thicker, gives out its taste more re-
adily, and forms an ink with a chalybeate more
suddenly than the fresh cold infusion. This infu-
sion, however, contains at least as much extrac-
tive matter, but more in a state of solution; and
its colour, on standing some time with the chaly-
beate, becomes darker, while that of the decoction
becomes more faint. When they are of a cer-
tain age, the addition of a chalybeate renders them
green; and when this is the case, they are in a
state of fermentation, and effete. Mild or caustic
alkalies, or lime, precipitate the extractive matter,
which in the case of the caustic alkali is re-dissolved
by a farther addition of the alkali. Lime-water
precipitates less from a fresh infusion than from a
fresh decoction; and in the precipitate of this last
some mild earth is perceptible. The infusion is
by age reduced to the same state with the fresh
decoction, and then they deposit nearly an equal
quantity of mild earth and extractive matter; so
that lime-water, as well as a chalybeate, may be
used as a test of the relative strength and perishable
nature of the different preparations, and of differ-
ent barks. Accordingly cold infusions are found
by experiments to be less perishable than decoctions;
infusions and decoctions of the red bark
than those of the pale; those of the red bark,
however, are found by length of time to separate
more mild earth with the lime-water, and more
extracted matter. Lime-water, as precipitating
the extracted matter, appears an equally improper
and disagreeable menstruum. Water suspends the
resin by means of much less gum than has been
supposed. Rectified spirit of wine extracts a bit-
terness, but no astringency, from a residuum of

20 affusions of cold water; and water extracts astringency, but no bitterness, from the residuum of as many affusions of rectified spirit. The residua in both are insipid. From many ingenious experiments made on the Peruvian bark by Dr Irvine, published in a dissertation which gained the prize-medal given by the Harveian Society of Edinburgh for 1783, the power of different menstrua, as acting upon Peruvian bark, is ascertained with greater accuracy than had before been done: and, with respect to comparative power, the fluids after mentioned act in the order in which they are placed:—

1. *Dulcified spirit of vitriol.* 2. *Caustic ley.* 3. *French Brandy.* 4. *Rhenish wine.* 5. *Soft water.* 6. *Vinegar and water.* 7. *Dulcified spirit of nitre.* 8. *Mild volatile alkali.* 9. *Rectified spirit of wine.* 10. *Mild vegetable alkali.* 11. *Lime-water.* The antiseptic powers of vinegar and bark united are double the sum of those taken separately. The astringent power of the bark is increased by acid of vitriol; the bitter taste is destroyed by it. The official preparations of the bark are, 1. *The powder:* of this, the first parcel that passes the sieve being the most resinous and brittle layer, is the strongest. 2. *The extract:* the watery and spirituous extract conjoined form the most proper preparations of this kind. 3. *The resin:* this cannot perhaps be obtained separate from the gummy part, nor would it be desirable. 4. *Spirituous tincture:* this is best made with proof-spirit. 5. *The decoction:* this preparation, though frequently employed, is yet in many respects inferior even to a simple watery infusion. The best form is that of powder: in which the constituent parts are in the most effectual proportion. The cold infusion, which can be made in a few minutes by agitation, the spirituous tincture, and the extract, are likewise proper in this respect. For covering the taste, different patients require different vehicles; liquorice, aromatics, acids, port wine, small beer, porter, milk, butter-milk, &c. are frequently employed; and it may be given in form of electuary with currant jelly, with brandy, or with rum.

(4.) PERUVIAN CAMEL. See CAMELUS, N° 3.

(5.) PERUVIAN HARE. See LEPUS, N° 15.

(6.) PERUVIAN SHEEP. See CAMELUS, N° 3.

PERUVIANA, a vast peninsula, extending itself from the isthmus of Darien to Cape Horn, in the form of a triangle, of which TERRA MAGELLANICA and the Cape form the vertex. It includes the whole of South America, although all the countries included within these limits do not acknowledge the dominion of the crown of Spain. See TERRA FIRMA.

PERUVIANS. *n. f.* the people of PERU. See PERU, § 6.

PERUZZI, Balthazar, an historical painter and architect, born in 1481. He went to Rome, and was employed by Alexander VI, Julius II, and Leo X. He was so perfect in Chiaro oscuro and perspective, that Titian himself beheld his works with astonishment. He was in Rome in 1527, when Charles V. sacked it; but procured his liberty by painting a portrait of the Constable, Bourbon. He died in 1556.

PERWANNAH. *n. f.* in the language of Bengal, an order of government, or a letter from a man in authority.

PERWIS, a town of France, in the dep. of the Dyle, and ci-devant prov. of Austrian Brabant; 6 miles NE. of Gemblours.

PERZANO, a town in Albania; containing 1600 people.

PERZENE, a town of Italy, in the dep. of the Reno, district and late duchy of Bologna, 8 miles NE. of Bologna.

* PESADE. *n. f.* *Pesade* is a motion a horse makes in raising or lifting up his forequarters, keeping his hind legs upon the ground without stirring. *Farrier's Dict.*

PESAN, an island in the East Sea, near the coast of China. Lon. 137. 45. E. of Ferro. Lat. 26. 51. N.

(1.) PESARO, a large city of Italy, in the territory of the pope, and duchy of Urbino, with a bishop's see, and streets paved with bricks. The castle is well fortified, the harbour excellent, and the cathedral magnificent. The environs are famous for figs, of which they send large quantities to Venice. It is seated on an eminence at the mouth of the Foglia, on the Gulph of Venice. Lon. 13. 0. E. Lat. 43. 56. V.

(2.) PESARO, a district of Italy, in the department of the Rubicon. At the general census, taken on the 13th May 1801, it contained 35,473 citizens.

(3.) PESARO, the capital of the above department. It seems to be the city in Urbino above described, (see N° 1.) taken from the Pope's dominions, and annexed by Bonaparte to the Italian republic, since become a kingdom; as we find no other town of the name mentioned by geographers.

PESCAGLIO, a town of Italy, in the dep. of the Lario, district and late duchy of Como; seated on the W. bank of the SE. arm of the lake of Como.

PESCARA, a very strong town of Naples, in Abruzzo Citra; seated at the mouth of a river so named, which falls into the Gulph of Venice. Lon. 15. 2. E. Lat. 42. 27. N.

PESCATAWAY. See PESCATAWAY.

PESCE, Nicholas, a famous Sicilian diver, of whom F. Kircher gives the following account. "In the time of Frederic king of Sicily (says Kircher), there lived a celebrated diver, whose name was *Nicholas*, and who, from his amazing skill in swimming, and his perseverance under water, was surnamed the *fish*. This man had from his infancy been used to the sea; and earned his scanty subsistence by diving for corals and oysters, which he sold to villagers on shore. His long acquaintance with the sea, at last, brought it to be almost his natural element. He was frequently known to spend five days in the midst of the waves, without any other provisions than the fish which he caught there and ate raw. He often swam over from Sicily into Calabria, a tempestuous and dangerous passage, carrying letters from the king. He was frequently known to swim among the gulphs of the Lipari islands, no way apprehensive of danger. Some mariners out at sea, one day observed something at some distance from them, which they regarded as a sea-monster; but upon its approach it was known to be Nicholas, whom they took into their ship. When they asked him whither

whither he was going in so stormy and rough a sea, and at such a distance from land, he showed them a packet of letters, which he was carrying to one of the towns of Italy, exactly done up in a leather bag, in such a manner as that they could not be wetted by the sea. He kept them thus company for some time in their voyage, conversing, and asking questions; and after eating an hearty meal with them, he took his leave, and, jumping into the sea, pursued his voyage alone. "In order to aid these powers of enduring in the deep, nature seemed to have assisted him in a very extraordinary manner: for the space between his fingers and toes were webbed, as in a goose; and his chest became so very capacious, that he could take in at one inspiration, as much breath as would serve him for a whole day. The account of so extraordinary a person did not fail to reach, the king himself; who commanded Nicholas to be brought before him. It was no easy matter to find Nicholas, who generally spent his time in the solitudes of the deep; but, at last, after much searching, he was found, and brought before his majesty. The curiosity of this monarch had been long excited by the accounts he had heard of the bottom of the gulph of Charybdis, he now therefore conceived, that it would be a proper opportunity to have more certain information. He therefore commanded our poor diver to examine the bottom of this dreadful whirlpool; and as an incitement to his obedience, he ordered a golden cup to be flung into it. Nicholas was not insensible of the danger to which he was exposed; dangers best known only to himself; and therefore he presumed to remonstrate: but the hopes of the reward, the desire of pleasing the king, and the pleasure of showing his skill, at last prevailed. He instantly jumped into the gulph, and was as instantly swallowed up in its bosom. He continued for three quarters of an hour below; during which time the king and his attendants remained on shore, anxious for his fate; but he at last appeared, holding the cup in triumph in one hand, and making his way good among the waves with the other. It may be supposed he was received with applause when he came on shore: the cup was made the reward of his adventure; the king ordered him to be taken proper care of; and, as he was somewhat fatigued and debilitated by his labour, after an hearty meal he was put to bed, and permitted to refresh himself by sleeping. When his spirits were thus restored, he was again brought to satisfy the king's curiosity with a narrative of the wonders he had seen; and his account was to the following effect. He would never, he said, have obeyed the king's commands, had he been apprised of half the dangers that were before him. There were four things, he said, which rendered the gulph dreadful, not only to men, but to fishes themselves. 1. The force of the water bursting up from the bottom, which required great strength to resist. 2. The abruptness of the rocks that on every side threatened destruction. 3. The force of the whirlpool dashing against those rocks. And, 4. The number and magnitude of the polypous fish, some of which appeared as large as a man; and which, every where sticking against the rocks, projected their fibrous arms to entangle him.

Being asked how he was able so readily to find the cup that had been thrown in, he replied, that it happened to be flung by the waves into the cavity of a rock against which he himself was urged in his descent. This account, however, did not satisfy the king's curiosity. Being requested to venture once more into the gulph for further discoveries, he at first refused: but the king, desirous of having the most exact information possible of all things to be found in the gulph, repeated his solicitations; and, to give them still greater weight, produced a larger cup than the former; and added also a purlo of gold. Upon these considerations, the unfortunate diver once again plunged into the whirlpool, and was never heard of more."

PESCENNIUS NIGER. See NIGER, N° 1.

PESCHIERA, a small but strong town of Italy, in the department of the Mincio district, and late ducy of Verona, with a castle and a strong fort; seated on the Mincio; at its origin from the lake of Garda. This town and fort were abandoned by General Beaulieu, and taken by the French, on the 30th May 1796; and the Austrians, under General Wurms, were again defeated near it on the 6th August 1796. Lon. 11. 4. E. Lat. 45. 27. N.

PESCHISE, a town of Naples in Capitanata, 11 miles NW. of Vieste.

PESCIA, a town of Etruria, with a bishop's see; containing 10 churches and 5 convents; famous for its oil: 10 miles SW. of Pistoia.

(1.) PESCINA, 3 towns of Naples: viz. 1. in Abruzzo Ultra; 4½ miles SE. of Celano.

(2.) PESCINA DI FRATEI, in Capitanata, 8 miles W. of Vieste.

(3.) PESCINA POMPEIA, in Bari, 9 miles N. of Matera.

PESCO, 4 towns of Naples; thus named, 1. PESCO CASTRARO, in Abruzzo Ultra, 11 miles NE. of Aquila.

2. PESCO COSTANZO, in Abruzzo Citra; 7 miles SE. of Solmanco.

3. PESCO PAGANO, in Otranto, 11 miles NE. of Tarento.

4. PESCO VERRARO, in Principato Ultra; 12 miles from Benevento.

PESCOTTER, or } a river of S. Wales, in
PESCOTTOR, } Caermarthenshire, which runs into the Towy.

PESENAS, an ancient town of France, in the dep. of Herault, and ci-devant prov. of Languedoc, and diocese of Agde; delightfully seated on the river Pein, 12 miles NE. of Beseirs, and 8 N. of Agde. Lon. 3. 34. E. Lat. 43. 28 N.

PESINGAN, a town of Asia, in Candahar, 90 miles SE. of Candahar.

PESME, a town of France, in the department of Upper Saone, 8 miles NE. of Auxonne, and 10½ S. of Gray. Lon. 23. 13. E. of Ferro. Lat. 47. 17. N.

(1.) PESNITZ, LOWER, a river of Germany, in Stiria, which rises near Schmierenberg, and runs into the Drave, 2 miles W. of Fridant.

(2.) PESNITZ, UPPER, a river of Stiria, which rises near Schmierenberg, and runs into the Salm, near Wippels Pach.

PESOLA, a lake of Naples in Basilicata, at the foot of the Apennines.

PESQUERA,

PESQUERA, a town of Spain, in Leon, on the Douero, 18 miles SE. of Leon.

PESAN, a town of France, in the department of the Gers, 3 miles SE. of Auch.

(1.) * PESSARY. *n. f.* [*peffaie*, Fr.] Is an oblong form of medicine, made to thrust up into the uterus upon some extraordinary occasions.—Of cantharides he prescribes five in a *peffary*. *Arb.*

(2.) PESSARY, in medicine, is also a solid substance composed of wool, lint, or linen, mixed with powder, oil, wax, &c. made round and long like a finger, in order to be introduced in the exterior neck of the matrix, for the cure of several uterine disorders.

PESSER, a mountain of Germany, in Tirol.

PESSINUS, a town of Phrygia, famous for a temple and image of Cybele. *Strabo*, 12. *Paus.* vii, 17.

(1.) * PEST. *n. f.* [*peste*, Fr. *peſtis*, Lat.] 1. Plague; pestilence.—

The god propitiate, and the *pest* assuage. *Pope.*

2. Any thing mischievous or destructive.—
At her words the hellish *pest*
Forbore. *Milton.*

Of all virtues justice is the best;
Valour without it is a common *pest*. *Walker.*
The *pest* a virgin's face and bosom bears. *Pope.*

(2, 3.) PEST, in geography, a town of Upper Hungary, capital of a county so named, seated on the Danube, in a fine plain, over-against Buda, 85 miles SE. of Presburg. Lon. 18. 25. E. Lat. 47. 24. N.

* To PESTER. *v. a.* [*peſter*, Fr.] 1. To disturb; to perplex; to harass; to turmoil.—
Who then shall blame.

His *peſter'd* senses to recoil and start? *Shak.*

He hath not fail'd to *peſter* us with message,
Importing the surrender of those lands. *Shak.*

—We are *peſtered* with mice and rats. *Mere against Atheism.*—A multitude of scribblers daily *peſter* the world with their insufferable stuff. *Dryden.*
They did so much *peſter* the church and delude the people, that contradictions were equally revered by them as the infallible will of God South.

At home he was pursu'd with noise;
Abroad was *peſter'd* by the boys. *Swift.*

2. To encumber.—
Fitches and pease
For *peſt ring* too much on a hovel they lay. *Tupper.*

The people crowding near within the *peſter'd* room. *Drayton.*

Confin'd and *peſter'd* in this pinfold. *Milton.*

* PESTERER. *n. f.* [from *peſter*.] One that *peſters* or disturbs.

* PESTROUS. *adj.* [from *peſter*.] Encumbering; cumbersome.—In the statute against vagabonds note the dislike the parliament had of *gaoling* them, as that which was chargeable *peſt*rous, and of no open example. *Bacon.*

* PESTHOUSE. *n. f.* [from *peſt* and *houſe*.] An hospital for persons infected with the plague.

PESTI, a town of Naples, in Principato Citra, near the ruins of the ancient Pæstum or Poſſidonia, 20 miles SE. of Salerno.

PESTICIA, a town of Naples, in Baſilicata, 2½ miles N. of Turfi.

* PESTIFEROUS. *adj.* [from *peſtifer*, Lat.]

1. Destructive; mischievous.—

Such is thy audacious wickedness,
Thy lewd, *peſtiferous* and dissentious pranks,
The very infants prattle of thy pride. *Shak.*
—You, that have discover'd secrets, and made such *peſtiferous* reports of men nobly held, must die. *Shak.* 2. Pestilential; malignant; infectious.
—It is easy to conceive how the steams of *peſtiferous* bodies taint the air. *Arbutnot.*

(1.) * PESTILENCE. *n. f.* [*peſtilence*, Fr. *peſtilentia*. Latin.] Plague; pest; contagious distemper.—

The red *peſtilence* strike all trades. *Shak.*
Methought she purg'd the air of *peſtilence*. *Shakespeare.*

(2.) PESTILENCE. See MEDICINE, § 634—638.

* PESTILENT. *adj.* [*peſilent*, Fr. *peſilens*, Lat.] 1. Producing plagues; malignant.—Great ringing of bells in populous cities dissipated *peſilent* air. *Bacon's Nat. Hiſt.*—Hoary moulded bread the soldiers thrusting upon their spears raised against king Ferdinand, who with such corrupt and *peſilent* bread would feed them. *Knolles.*—To those people that dwell under or near the equator, a perpetual spring would be a most *peſilent* and insupportable summer. *Bentley.* 3. Mischievous; destructive.—There is nothing more contagious and *peſilent* than some kinds of harmony. *Hooker.*

Which precedent, of *peſilent* import,
Against thee, Henry, had been brought. *Daniel.*
—The world abounds with *peſilent* books, written against this doctrine. *Swift's Miſe.*—In ludicrous language, it is used to exaggerate the meaning of another word.—

One *peſilent* fine,
His beard no bigger though than thine,
Walked on before the rest. *Suckling.*

* PESTILENTIAL. *adj.* [*peſilenciel*, Fr. *peſilens*, Lat.] 1. Partaking of the nature of pestilence; producing pestilence; infectious; contagious.—These with the air passing into the lungs, infect the mass of blood, and lay the foundation of *peſtilential* fevers. *Woodward.*

Fire involv'd
In *peſtilential* vapours. *Addison.*
2. Mischievous; destructive; pernicious.—This shews the *peſtilential* design of those that attempt to disjoin the civil and ecclesiastical interests. *South.*

* PESTILENTLY. *adv.* [from *peſilent*.] Mischievously; destructively.

* PESTILLATION. *n. f.* [*peſtillum*, Latin.] The act of pounding or breaking in a mortar.—The best diamonds are comminable, and so far from breaking hammers, that they submit unto *peſtillation*. *Brown's Vulgar Errors.*

PESTIS, [Lat.] the Plague. See MEDICINE, Index.

PESTIVIEN, a town of France in the dep. of the North Coasts; 10 miles SSW. of Guingamp, and 12 N. of Rosieruen.

(1.) * PESTLE. *n. f.* [*peſtillum*, Lat.] An instrument with which any thing is broken in a mortar.—What real alteration can the beating of the *peſt*

peſſe make in any body, but of the texture of it? *Locke*.—Upon our vegetable food the teeth and jaws act as the *peſſe* and mortar. *Arbutnot*.

(2.) * *PESTLE OF PORK*. *n. f.* A gammon of bacon. *Ainſworth*.

PESTOVSKOI, a town of Ruſſia, in Viatka, on the Suran; 48 miles NNE. of Sloboſkoi.

PESU, a town of China, in Kiang-nan.

* *PET*. *n. f.* [This word is of doubtful etymology; from *deſpit*, Fr. or *impetus*, Lat. Perhaps it may be derived ſome way from *petit*, as it implies only a little fume or fret.] 1. A ſlight paſſion; a ſlight fit of peeviſhneſs.—

If all the world

Should in a *pet* of temperance feed on pulſe.

Milton.

—if we cannot obtain every vain thing we aſk, our next buſineſs is to take *pet* at the refusal. *L'Eſtrange*.—Life, given for noble purpoſes, muſt not be thrown up in a *pet*. *Collier*.—

They cauſe the proud their viſits to delay,
And ſend the godly in a *pet* to pray. *Pope*.
2. A lamb taken into the houſe, and brought up by hand.—A cade lamb. [Probably from *petit*, little.] See *PEAT*. *Hamner*.

PETAECIATA, a town of Naples, in Abruzzo Citra; 23 miles SE. of Civita Borella.

PETAGUEL, a territory of Brazil, bounded N. by Dele, E. by the ſea, S. by Rio Grande, and W. by Tupuys. It contains mines of ſilver.

(1.) * *PETAL*. *n. f.* [*petalum*, Latin.] *Petal* is a term in botany, ſignifying thoſe fine coloured leaves that compoſe the flowers of all plants: whence plants are diſtinguiſhed into monopetalous, whoſe flower is one continued leaf; tripetalous, pentapetalous, and polypetalous, when they conſiſt of three, five, or many leaves. *Quincy*.

(2.) *PETAL*, in botany. See *BOTANY*, § 146.

PETALIFORME. See *BOTANY*, *Gloſſary*.

PETALISM, *n. f.* a mode of deciding on the guilt of citizens, ſimilar to the Athenian *OSTRACISM*. It was introduced in Syracuſe about A. A. C. 460, to prevent the tyranny of the richer citizens, who had often about that time aimed at the diadem. To prevent, therefore, the evils daily ariſing from thence, and to bring down the aſpiring minds of the wealthy citizens, the Syracuſans were forced to make a law like that of the Athenian oſtraciſm; differing only in this, that every citizen at Syracuſe ſhould write on a *leaf*, inſtead of a *ſhell*, the names of ſuch as they apprehended powerful enough to uſurp the ſovereignty. When the leaves were counted, he who had the moſt ſuffrages againſt him was, without farther inquiry, baniſhed for 5 years. This method of weakening the intereſt of the overgrowing citizens was called *petaliſm*, from *πτελον*, a *leaf*. This law was attended with many evil conſequences; for thoſe who were moſt capable of governing the commonwealth were driven out, and the adminiſtration of public affairs committed to the meaneſt of the people; nay, many of the chief citizens, who were able to render their country great ſervice, fearing to fall under the penalties of this law, withdrew from the city, and lived private in the country, not concerning themſelves with public affairs: whence all the employments being filled with men of no merit or experience, the republic was on the brink

of ruin, and ready to fall into a ſtate of anarchy and conſuſion. The law, therefore, of petaliſm, upon more mature deliberation, was repealed ſoon after it had been enacted, and the reins of government were again put into the hands of men who knew how to manage them.

PETALOIDES FLOS. See *BOTANY*, *Gloſſary*.

* *PETALOUS*. *adj.* [from *petal*.] Having petals.

PETAPA, a town of Mexico, in Guatimala; 20 miles S. of Guatimala.

(1.) * *PETAR*. } *n. f.* [*petard*, Fr. *petardo*,

(1.) * *PETARD*. } Italian.] A *petard* is an engine of metal, almoſt in the ſhape of an hat, about ſeven inches deep, and about five inches over at the mouth: when charged with fine powder well beaten, it is covered with a madrier or plank, bound down faſt with ropes, running through handles, which are round the rim, near the mouth of it: this *petard* is applied to gates or barriers of ſuch places as are deſigned to be ſurprized, to blow them up: they are alſo uſed in countermines, to break through into the enemy's galleries. *Military Diſt.*—

'Tis the ſport to have the engineer
Hoſt with his own *petar*. *Shakeſp. Hamlet*.

The conjugal *petard* that tears
Down all portcullices of ears. *Hudibras*.

(2.) *PETARD*. See *PROJECTILES*.

PETATLAN, a town of Mexico, in the audience of Guadalajara, and province of Culiacan; 90 miles NNW. of Culiacan.

PETAU, Denis, or } a French Jeſuit of
PETAVIUS, Dionyſius, } great erudition, born at Orleans in 1583. He was but 19 years of age when he was made profeſſor of philoſophy in the univerſity of Bourges. He joined the Jeſuits in 1605, and did great credit to them by his erudition. He became a zealous advocate for the church of Rome; and criticized and abuſed its adverſaries. His chief work, which is ſtill in great repute, he entitled *Rotinarium Temporum*. It is an abridgement of univerſal hiſtory, from the earlieſt times to 1632, with authorities. He died at Paris in 1652.

PETAURI, in zoology. Flying Squirrels; a ſubdiviſion in the genus *Sciurus*. They have a hairy membrane extended from the fore to the hind legs, adapted for flying. They are ſtyled by Linnæus and Gmelin *Sciuri Volantes*, *Flying Squirrels*, in diſtinction from the *Sciuri Scandentes*, or *Climbing Squirrels*; but Dr Shaw ſtyles them *Petauri*, wherein he is followed by Mr Kerr, who enumerates 8 ſpecies. See *SCIURUS*.

PETAW, an ancient town of Auſtria, in Stiria; ſeated on the Drave, 35 miles NE. of Cilley, and 109 S. of Vienna. Lon. 15. 36. E. Lat. 46. 40. N.

PETA-YANG, an iſland near the coaſt of China, in the Eaſt Sea. Lon. 137. 35. E. of Ferro. Lat. 26. 2. N.

PETCHELI, a province of China, and the chief in the whole empire; bounded on the E. by the ſea, N. by the great wall, W. by Chanſi, and S. by Chantong and Honan. It contains 9 cities of the firſt claſs, which have ſeveral others under their juridiſdiction; theſe are about 40 in number, leſs conſiderable indeed, but all ſurrounded with walls and ditches. *Petcheli* has few mountains.

L!

Its

Its soil is sandy, and produces little rice; but all other kinds of grain abound there, as well as the greater part of the fruit-trees we have in Europe. It pays an annual tribute to the emperor, which, according to F. Martini, consists of 601,153 bags of rice, wheat, and millet; 224 pounds of linseed; 45,135 of spun silk; 13,748 of cotton; 8,737,248 trusses of straw for the horses belonging to the court; and 180,870 measures of salt, each containing 124 lb.; which is proportionably much inferior to that paid by other provinces. The face of the country here being flat, they use a kind of chariot with one wheel, constructed in such a manner, that there is room in the middle for only one person, who sits as if on horseback; the driver pushes behind, and by means of wooden levers, makes the chariot advance with safety and expedition.

PETCHORA, a river of Russia, which rises in the E. of Utiug, in Lon. 77° E. Lat. 62° 20' N. and falls into the Frozen Ocean, in Lon. 68. 20. E. Ferro. Lat. 67. 40. N.

PETECHIÆ, in medicine, a name given to those spots, whether red or of any other colour, which appear in malignant fevers.

* **PETECHIAL**. *adj.* [from *petechia*, Latin.] Pustulently spotted.—In London are many fevers with buboes and carbuncles, and many *petechial* or spotted fevers. *Arbuthnot*.

PETELANGE, a town of France, in the dep. of the Moselle, 9 miles SW. of Sarguemines, and 13½ NE. of Morhange.

PETELIA, or **PETILIA**, an ancient town of Italy, in Magna Græcia, the capital of Lucania, built, or at least repaired, by **PHILOCRATES**, who, after his return from the Trojan war, left his country Melibœa, his subjects having revolted. (*Mela*, li. 4. *Liv.* xxiii. 20.) It made a conspicuous figure during the 2d Punic war, by its obstinate resistance to Hannibal. Marcellus, Hannibal's rival, was slain in a battle near its walls. It is now called *Strongoli*. See **STRONGOLI**.

(1.) **PETER**, Sr, the apostle, born at Bethsaida, was son of Jonas, and brother of St Andrew. (John i. 42, 43.) His first name was Simon; but when our Saviour called him to the apostleship, he changed his name into Cephas, that is, in Syriac, a *stone*, or a *rock*; in Latin, *petra*, whence *Peter*. He was a married man; and had his house, his mother-in-law, and his wife, at Capernaum, upon the lake of Gennesareth. (Mark i. 29. Mat. viii. 14. Luke iv. 38.) St Andrew having been first called by Jesus Christ, met his brother Simon, and told him (John i. 41.), "we have found the Messiah," and then brought him to Jesus. After having passed one day with our Saviour, they returned to their ordinary occupation, fishing. But it is thought they were present with him at the marriage of Cana in Galilee. This happened A. D. 30. St Peter's miraculous draught of fishes; the cure of his wife's mother; his walking upon the waters; his answers to our Saviour's important questions; his presence at the transfiguration; his payment of the tribute; his question respecting forgiveness, and the destruction of the temple; his vain self-confidence that he would stand by his Lord; his triple denial of him soon

after, with his consequent repentance; his meeting with him after his resurrection; his second miraculous draught of fishes; our Saviour's trying questions to him; his meeting with the other apostles; the miraculous gift of tongues; his sermon or address to the people; the consequent conversion of 3000 persons; his miraculous cure of the lame beggar, and conversion of other 5000; his imprisonment by the priests and Sadducees, and his boldness on that occasion; his annunciation of death to Ananias and Sapphira; his second imprisonment, and liberation by an angel; his boldness before the Jewish rulers; his sufferings and dismissal; his preaching at Samaria; his reproof to Simon the magician; his cure of Æneas at Lydda; his raising up Tabitha from death; his vision at Joppa, the message to him from Cornelius, and his conversion; Peter's visit to him, and the consequences; his return to Jerusalem; with his imprisonment by Herod Agrippa, A. D. 44; are all recorded, with many other interesting particulars, in the Gospels, and Acts of the Apostles. After his delivery from prison by the angel, he left Jerusalem; but we are not told what became of him till the council held at Jerusalem in the year 51. It is thought that before this time he made his second journey to Rome, whence he wrote his first epistle. St Peter was obliged to leave Rome in the year 51, by order of the emperor Claudius, who had banished all Jews from thence. The particulars of St Peter's life are little known from A. D. 51, in which the council of Jerusalem was held, till his last journey to Rome, which was some time before his death. Then being acquainted by revelation that the time of his death was not far off (2 Pet. i. 14.), he wrote to the faithful his second epistle. St Peter and St Paul came to Rome about the same time, A. D. 65, where they performed many miracles, and made many converts. Simon Magus by his tricks continued here to deceive the people, pretending himself to be the Messiah, and even attempting to ascend into heaven. See **SIMON MAGUS**. Soon after this, St Peter was thrown into prison, where it is said he continued for nine months: at last he was crucified at Rome, in the Via Ostia, with his head downwards, as he himself had desired of his executioners. This he did out of a sense of humility, lest it should be thought, as St Ambrose says, that he affected the glory of Jesus Christ. It is said, that his body was at first buried in the catacombs, two miles from Rome, from whence it was afterwards transported to the Vatican, where it has lain ever since. His festival is celebrated with that of St Paul, on the 29th of June. St Peter died A. D. 66, after having been bishop of Rome about 24 or 25 years. His age was about 74 or 75. It is agreed, that St Linus was his successor. St Peter has been made the author of several books; such were his Acts, his Gospel, his Revelation, his work about preaching, and another about judgment. There is extant a large history of St Peter, called the *Recognitions*, ascribed to St Clement.

(2.) **PETER OF BLOIS**, a learned man of the 12th century, born about 1110, at Blois in France. He was the first person who employed the famous word

uncle to prince Alexis. The prince's confessor had also his head cut off. The remainder of the czar's life was nothing but a series of grand projects, labours, and exploits, that seemed to efface the memory of his excessive severities. He made frequent speeches to his court and to his council. In one he told them that he had sacrificed his son to the welfare of his dominions. He died of the strangury in 1725, and left the world at least with the magnanimity of a hero, if not with the piety of a Christian. Peter was tall of stature, and of a bold and majestic aspect, though sometimes disfigured by convulsions, which altered his features. He conversed with persons in all stations. He loved women; and valued himself on drinking large draughts, rather than sipping delicious wines. For a minute account of his improvements, &c. see RUSSIA, PETERSBURG, and CATHARINE I.

(7.) PETER THE II. emperor of Russia, the son of the unfortunate prince Alexis, was born in 1715; and in 1727, succeeded the empress Catharine I. who had declared him grand duke in 1726. The most remarkable event of his reign was the disgrace of Pr. Menzikoff. See MENZIKOFF. He died in 1730, aged 15.

(6.) PETER THE III. emperor of Russia, was the son of Charles Frederick, D. of Holstein Gottorp, by the princess Anne, daughter of Peter the Great, and was born in 1728. On the death of the empress Elizabeth, in 1762, he succeeded to the throne, but did not long enjoy it; being dethroned the same year, by his wife, CATHARINE II. He died in confinement 7 days afterwards, and, as is generally believed, was murdered in a barbarous manner, similar to that by which Edward II. of England perished. See ENGLAND, § 28, and RUSSIA.

(7.) PETER THE III. K. of Arragon, succeeded his father James I. in 1276, and turned his arms against Navarre, to which kingdom he laid claim; but failed in the conquest of it. He married the daughter of Manfred K. of Sicily; and, to effect the conquest of that island, contrived the horrible massacre of the French, called the *Sicilian Vespers*. (See SICILY.) For this crime he and the Sicilians were excommunicated by Pope Martin IV. He died at Villefranche in 1285.

(8.) PETER THE CRUEL, K. of Castile, succeeded his father Alphonfus XI. in 1350, in his 16th year, and proved a most barbarous and bloody tyrant; which provoked his subjects to rebel and expel him; but, little to the honour of the English, was restored by their assistance under the command of the brave *Black Prince* Edward. He was afterwards, however, abandoned by him, and met his just fate from his brother Henry, Count of Trastamara, who killed him with his own hand. See SPAIN.

(9-12.) PETER, was also the name of 4 kings of Portugal. See PORTUGAL.

(13.) PETER, or DON PEDRO, of Portugal, D. of Coimbra, was the 2d son of John, K. of Portugal, and born 4th March, 1394. He was one of the most accomplished princes of his age; was himself very learned, and was a patron of all learned men. To increase his knowledge, he travelled through the principal countries in Europe,

Asia, and Africa, with a train suitable to his quality; of which travels an account was published, but according to the spirit of the times, loaded with romantic fables. On his return he married Isabel, daughter of Count Urgel, and grand-daughter of K. Peter IV. In his travels he visited England, and was made a Knight of the Garter, April 23, 1417, by his cousin K. Henry V. who was grand-son of John of Gaunt by the father, as Don Pedro was by the mother. In 1440, he was appointed regent of Portugal, during the minority of his cousin Alphonfus V. His regency was so mild as well as just, that the people of Lisbon asked leave to erect a statue to him, which this great prince declined. He governed the kingdom with so much propriety, that Portugal was never more respected by the other powers of Europe. He diminished the taxes, maintained the laws in their vigour, and gave the young king an excellent education; who when he came of age, was so pleased with his conduct, that he married and raised to the throne, the Duke's daughter, Donna Isabella, in 1446. Yet all his merits did not prevent the envy of some courtiers, who at last got so much the ear of the silly monarch, as to persuade him that the Duke was a traitor. Their villainous machinations at last effected his death; but upon an inspection of his papers, Alphonfus became convinced of his innocence; and, as the only amends he could now make, ordered his body to be interred with every mark of honour in his own sepulchre.

(14.) PETER, THE WILD BOY, a savage, found in the woods near Hamelen, a town in the electorate of Hanover, when King George I. with a party of friends, was hunting in the forest of Hertswold. He was supposed to be then about 12 years of age, and had subsisted in those woods, upon leaves, berries, wild plants, bark of trees, &c. from his infancy. How long he had been in that state is not known. In 1726, he was brought over to England, and put under the care of Dr Arbuthnot, with proper teachers. But though there appeared no natural defect in his organs of speech, he could never be brought to articulate a single syllable distinctly. He was afterwards committed to the care of different persons, but never acquired any degree of improvement. He died 22d Feb. 1785, when he was supposed to be 73 years old. He was well made; middle-sized; had no appearance of an idiot, nor any thing particular in his form, except two of his fingers, united by a web up to the middle joint. He was delighted with music, and learned to hum a tune. He had a fore-knowledge of bad weather. Lord Monboddo gives a particular description of him, as an instance of his favourite hypothesis, that "man in a state of nature is a mere animal."

PETER AND PAUL, ST. in geography. See PETROPAULOWSKOI.

(1.) PETERBOROUGH, a city of Northamptonshire, about 82 miles from London. It is the least city, except perhaps Ely, and unquestionably the poorest bishopric, though one of the oldest towns, in England. It has a monastery dedicated to St Peter, and founded as early as the year 651, to which the abbot of Croyland and his monks flying for protection in 870, they were overtaken and

and murdered in a court of this monastery called the *monks churchyard* because they were all buried here; and to this day is to be seen the tombstone with their effigies, which had been erected over their common grave. Soon after this the Danes destroyed both the monastery and friars, so that it lay destitute for above 100 years. The monks were, however, restored, and lived very sumptuously, with a mitred abbot at their head, till the reformation, when Henry VIII. converted it into a bishop's see. The cathedral, which is said to be more than 1000 years old, though apparently more modern, is a noble Gothic fabric, and was much more so before it was defaced in the civil wars. The west front, which is 156 feet broad, is very stately; and besides columns curiously adorned, is supported by three of the tallest arches in Britain. The windows of the cloisters are finely ornamented with scripture paintings, and the succession of its abbots. There are also in the church, monuments of Q. Catherine, wife of Henry VIII. and of Mary Q. of Scots; and the figure of one Mr Scarlet the sexton, who buried them, and lived to 95, after he had buried all the housekeepers of the town twice over. There is but one parish church besides the cathedral. The city is governed by a mayor, recorder, and aldermen, by charter of Henry VIII. Besides the dean and chapter, who are an ecclesiastical corporation distinct from the bishop, there are 5 petty canons, 4 students in divinity, and about 30 inferior officers; with a grammar school, and two charity-schools. The air of Peterborough is said not to be very wholesome, by reason of the neighbouring fens; but the water of the river is fresh and good, the highest spring tide never coming up within 3 miles of the town; and there is plenty of excellent water in their wells. The streets are very poor, and the houses but mean; there is, however, a handsome market-house, over which are kept the assizes and sessions. Its jurisdiction extends over 32 towns and hamlets, wherein the civil magistrates appointed by the royal commission are vested with the same power as judges of assize, and hold their quarterly sessions in this city. It is 30 miles S. of Boston, and 81 N. of London. Lon. o. 10. W. Lat. 52. 30. N.

(2.) PETERBOROUGH, COUNTIES OF. See ROBINSON, N° 1.

(3.) PETERBOROUGH, E. OF. See MORDAUNT.

(4.) PETERBOROUGH, a town of Ireland, in Monaghan county, and province of Ulster.

(5.) PETERBOROUGH, a town of New Hampshire, in Hillsborough county; containing 861 citizens, in 1795. It is seated on the Contoocook; and has manufactures of iron, cloth, paper, paint, and oil. It is 70 miles W. of Portsmouth, and 366 from Philadelphia.

PETERCULTER, a parish of Scotland in Aberdeenshire; of an irregular figure; 8 miles long from E. to W. and from 5 to 6 broad; on the banks of the Dee. The climate is healthy; the surface rugged and uneven, with rocky eminences and marshy flats interpersed. The arable soil is a mixture of light loam, clay, and moss, in general fertile. The population, in 1794, was 1602; increase 247 since 1755. The number of

horses was 132; sheep 2380; and black cattle 1000. About 250 acres are planted with firs and other trees. The principal manufacture is paper, which is carried on with great success. There is also a distillery. On the top of the hill of *Old-town* there are relics of a rectangular camp. The rampart is called *Norman's Dyke*.

(1.) PETERHEAD, a town of Scotland, in the county of Aberdeen, about 30 miles NE. of that city. It stands on the most easterly point in Scotland, and from thence due west that kingdom is broadest. It is the nearest land to the northern continent of Europe, and lies within 300 miles of the *cape*, which is called the *Naze of Norway*. Through this channel the grand body of the herrings pass in their annual migrations from Shetland and the north seas to the more southern latitudes, attended with the all-devouring cod and ling; on which account Peterhead, or, as it is sometimes called, BUCHANNESS, hath always been the second station of the Dutch busses after leaving the Shetland islands. Tradition says, that some hundred years ago the Dutch offered Lord Moreschal, then the proprietor of the coast, to cover a small island called *Inch-Keith* with silver for the property of it to carry on their fisheries, which for obvious reasons could not be accepted. Be that as it may, the Dutch still frequent the coast in July and August, and sometimes 100 sail are seen within sight of land, busily employed in the herring and white fisheries. The natives to whom this treasure properly belongs, have lately made some attempts towards the white fishery, of which they cure and vend, chiefly at the London market, 4000 barrels of delicate small cod and ling annually. They also fit out some vessels for the Hebride fishery off Barrahead for Barcelona market; and they claim the merit of having taught the islanders how to take and cure the large fish which abound on their coasts. They have often gained the highest premiums allowed by government for curing white fishes. Few harbours in Great Britain are of more importance to navigation than this of Peterhead, as, in case of violent storms from the easterly points, large vessels embayed betwixt this and the mouth of the Forth have not a port that they can safely take at every time of the tide, that of Aberdeen excepted. If therefore they cannot make their way to sea in the teeth of a strong easterly wind, or double this headland that they may gain the Murray frith, they must inevitably come on shore. This harbour lies on a spacious bay, where vessels of any burden may ride in all other winds, and is therefore the general rendezvous of the shipping which frequent the northern seas, where they cast anchor on clean ground, and ride safely till the storms have abated. The harbour is defended by a good battery. A considerable trade is carried on directly to the Baltic for deals, iron, hemp, tar, and other articles. There is also a manufacture of sewing thread, which employs many young girls. A mineral well in summer gives great gaiety to the place; its salutary virtues have long, and very justly been celebrated. An analysis of this water has been given by Dr Laing; who found that one lb. avoirdupoise of the water con-

tains 30½ gr. muriat of iron; 7 gr. muriat of lime; 3½ gr. carbonat of iron; 2 gr. siliceous earth; 2 gr. sulphat of lime; 13½ gr. sulphat of soda; 7½ muriat of soda; and 8¾ cubic inches of carbonic acid gas. This water has long been in great repute for disorders of the stomach and bowels, gravel, dropsy, nervous affections, female complaints, scrophula, leucophlegmasia, and diseases of general debility.—The population of this town in 1794 was 2550. The town is in the form of a cross, and is divided into 4 districts. The town-house is an elegant building at the head of the principal street; 60 feet long, 40 broad, with a fine clock and a spire 100 feet high. It cost above L.2000. The late improvements of the piers have cost L.5000. The *Krith Inch* divides the harbour into N. and S. It has many elegant houses on it. Near it is a fort and a guard-house, with a battery of 4 twelve-pounders, and 4 eighteen-pounders. In 1795, this port had 28 vessels, carrying 3000 tons. In 1793, its trade was estimated at above 100,000l. a-year. Peterhead is a burgh of barony, governed by a bailie and 8 councillors. There are many elegant houses for the accommodation of strangers. There is also a ball-room, under which there are two salt-water baths. Owing to the open peninsulated situation, the air of this place is esteemed peculiarly pure and healthful; even the fogs rising from the sea are thought to be medicinal; the town is therefore much enlivened by the concourse of company who frequent it on these accounts. The town is neat and well built, the houses are handsome, and the streets tolerably spacious and very clean; and it has every appearance of a thriving, plentiful, and happy place. It is 24 miles N. of Aberdeen and 25 ESE. of Banff. Lon. 1. 39. W. Lat. 57° 30' 33" N.

(2.) PETERHEAD, a parish of Aberdeenshire, in the district of Buchan; 5 miles long from N. to S. and from 3 to 4 broad; comprehending about 5000 arable acres, and 2000 of moor and moor. The name is derived from the promontory, N° 3. The surface is level with a few eminences, the highest of which, STIRLING hill, is scarce 100 feet above the sea level. The coast on the S. is high and rocky. The soil is very various from a sandy loam and thin harly soil to a rich deep black earth and strong clay. It is watered by the Ugie, which affords salmon, trouts, &c. The climate is cold, but healthy. The chief crops are oats, barley, pease, beans, turnips, and potatoes. The population, in 1794, was 4100; increase 1613 since 1755. The number of horses was about 400; of sheep, 590, and black cattle 900. The roads are good.

(3.) PETERHEAD, anciently PETER'S HEAD, a promontory between the above town and the sea; which gives name to the town and parish. It is supposed to be the TAIXALON, or TAIXALON, or TAIXALON AKTON, of Ptolemy.

(4.) PETERHEAD BAY, a bay on the coast of Aberdeen, formed by the above town and promontory. It affords a very safe anchorage for ships of any burden, in all strong gales from the W. WNW. or WSW.

PETERHOFF, a town in Russia, about 20 miles from Peterburg, distinguished for its palace

and gardens. The palace was begun by Peter I. and finished by Elizabeth. As it is placed upon an eminence, it commands a most superb view of Cronstadt, Peterburg, the intervening gulf, and the opposite coast of Carelia. The palace is most magnificently furnished, and the suite of apartments are truly princely. The presence-chamber is richly ornamented with portraits of the sovereigns of the house of Romanof, who have reigned in Russia since 1613.

PETER LE PORT, ST, a market town of England, in the south-east part of Guernsey, in Hampshire, in the British channel, consisting of only one long and narrow street. The mouth of the harbour is well set with rocks, and is on each side defended by a castle, one called the *old castle*, and the other *castle-cornet*. The governor of the island generally resides here, who has the command of the garrison in this and all the other castles. The harbour has a good road, whence ships may sail with any wind, and from the road pass under the guns of the castle to the pier, close up to the town. The pier is a noble work, formed of vast stones, joined together with great art and regularity; it is not only a security to the ships, but, being contiguous to the town, is handsomely paved at the top with large smooth flag-stone, guarded with parapets; and, being of a great length and breadth, forms a pleasant walk, affording a free prospect of the sea and the neighbouring islands. Cornet-castle, which commands both the town and the harbour, stands on a rock separated from the land by an arm of the sea, no less than 600 yards wide, and not fordable but at low water in great spring-tides.

PETER-PENCE, was an annual tribute of one penny, paid at Rome out of every family at the feast of St Peter. And this Ina the Saxon king, when he went in pilgrimage to Rome about the year 740, gave to the pope, partly as alms, and partly in recompence of a house erected in Rome for English pilgrims. And this continued to be paid generally until the time of King Henry VIII. when it was enacted, that from henceforth no persons shall pay any pensions, Peter-pence, or other impositions, to the use of the bishop or see of Rome.

PETERS, Father, a Jesuit, was confessor and counsellor to James II. king of England. This prince dismissed him in 1688, because he was considered as the author of those troubles in which the kingdom was then involved.

(1, 2.) PETER, ST, 2 towns of Austria; 1. seven miles E. of Steyr; 2. twelve miles WSW. of Freustadt.

(3—5.) PETER, ST, 3 towns of Germany, in Stiria; viz. 1. four miles SE. of Landsberg; 2. six miles W. of Cilley; 3. three miles WNW. of Windisch Weitzitz.

(1.) PETERSBURG, or ST PETERSBERG, a city of Russia, in the province of Ingria, and capital of the whole empire. It was founded in 1703 by Czar Peter the Great, whose ambition it was to have a fleet on the Baltic; for which reason he determined to found a city which might become the centre of trade throughout all his dominions. The spot he pitched upon was a low, feney, uncultivated island, formed by the branches

ches of the Neva, before they fall into the gulph of Finland. In the summer this island was covered with mud; and in winter became a frozen pool, rendered almost inaccessible by dreary forests and deep morasses, the haunts of bears, wolves, and other savage animals. Having taken the fort of Nattébourg, and the town of Neifchanz, in 1703, Peter assembled in Ingria above 300,000 men, Russians, Tartars, Cossacks, Livonians, and others, even from the most distant parts of his empire, and laid the foundation of the citadel and fortifications, which were finished in 4 months, almost in despite of nature. He was obliged to open ways through forests, drain bogs, raise dikes, and lay causeways, before he could found the new city. The workmen were ill provided with necessary tools and implements, such as spades, pick-axes, shovels, planks, and wheelbarrows: they were even obliged to fetch the earth from a great distance in the skirts of their garments, or in little bags made of old mats and rags sewed together. They had neither huts nor houses to shelter them from the severity of the weather: the country, which had been desolated by war, could not accommodate such a multitude with provisions; and the supplies by the lake Ladoga were often retarded by contrary winds. In consequence of these hardships, above 100,000 men are said to have perished; nevertheless the work proceeded with incredible vigour and expedition; while Peter, for the security of his workmen, formed a great camp, in such a manner, that his infantry continued in Finland, and his cavalry were quartered in Ingria. The buildings of the city kept pace with the fortress, which is the centre of the town, surrounded on all sides by the Neva; and in little more than a year, above 30,000 houses were erected. At present there may be about double that number in Petersburg, though many of them are inconceivable. To people this city, Peter invited merchants, artificers, mechanics, and seamen, from all the different countries of Europe: he demolished the town of Nieuſchants, and brought hither not only the materials of the houses, but the inhabitants themselves. A thousand families were drawn from Moscow; he obliged his nobility to quit their palaces and their villas in and about Moscow, and take up their residence at Petersburg, in a much more cold and comfortless climate. Finally, resolving to remove hither the trade of Archangel, he issued an ordonnance, importing, that all such merchandise as had been conveyed to Archangel, to be sold to foreigners, should now be sent to Petersburg, where they should pay no more than the usual duties. These regulations have rendered this one of the greatest and most flourishing cities in Europe. The Russian boyars and nobility have built magnificent palaces, and are now reconciled to their situation. At first many houses were built of timber; but these being subject to sudden conflagrations, the Czar, in 1714, issued an order, that all new houses should be walled with brick and covered with tiles. The fort is an irregular hexagon, with opposite bastions. This, together with all the rest of the fortifications, was in the beginning formed of earth only; but in the sequel they were faced with strong walls, and provided

with casemates, which are bomb-proof. In the curtain of the fort, on the right-hand side, is a noble dispensary, well supplied with excellent medicines, and enriched with a great number of porcelain vases from China and Japan. The most remarkable building within the fort is the cathedral, built by the direction of an Italian architect. Petersburg is partly built on little islands, some of which are connected by draw-bridges; and partly on the continent. In the highest part, on the bank of the Neva, the Czar fixed his habitation, built of freestone, and situated so as to command a prospect of the greater part of the city. Here likewise is a royal foundery; together with the superb houses of many noblemen. On the other side of a branch of the Neva stands the Czar's summer palace, with a fine garden and orangery. Petersburg is very much subject to dangerous inundations. In 1715, all the bastions and draw-bridges were either overwhelmed or carried away. The breadth, depth, and rapidity of the Neva, have rendered it extremely difficult, if not impracticable, to join the islands and the continent by bridges. The adjacent country is so barren, that the town must be supplied with provisions from a great distance; consequently they are extremely dear. Here are woods in plenty, consisting of pine, fir, alder, birch, poplar, and elm; but the oak and the beech are generally brought from Casan. In winter the weather is extremely cold, and hot in the summer. Peter the Great established in the neighbourhood of Petersburg, manufactures of linen, paper, saltpetre, sulphur, gunpowder, and bricks, together with water-mills for sawing timber. He instituted a marine academy, and obliged every considerable family in Russia to send at least one son or kinsman, between the ages of 10 and 18 to this seminary. To crown his other plans of reformation, he granted letters patent for founding an academy, upon a very liberal endowment; and though he did not live to execute this scheme, his empress, who survived him, brought it to perfection. It was modelled on the plans of the royal society in London, and the academy of France. The present divisions of the town are called, 1. The Admiralty quarter; 2. the Vassili Ostrof or Island; 3. The Portress; 4. The Island of St Petersburg; and, 5. The various suburbs of Livonia, of Moscow, of Alexander Nevski, and Wiburgh. The late empress did so much for this city, that she may not improperly be called its second foundress. It is, nevertheless, still an infant place, and, as Mr Wrexhall observes, "only an immense outline, which will require future empresses, and almost future ages, to complete." The streets in general, says Mr Coxe are broad and spacious; and three of the principal ones, which meet in a point at the admiralty, and reach to the extremities of the suburbs, are at least two miles in length. Most of them are paved; but a few are still suffered to remain floored with planks. In several parts of the metropolis, particularly in the Vassili Ostrof, wooden houses and habitations, scarcely superior to common cottages, are blended with the public buildings; but this motley mixture is far less common than at Moscow, where alone can be formed any idea of an ancient Russian city. The brick houses are ornamented

ornamented with a white stucco, which has led several travellers to say that they are built with stone; whereas, unless I am greatly mistaken, there are only two stone structures in all Petersburg. The one is a palace, building by the empress upon the banks of the Neva, called *the marble palace*; it is of hewn granite, with marble columns and ornaments; the other is the church of St Isaac, constructed with the same materials, but not yet finished. The mansions of the nobility are many of them vast piles of building; they are furnished with great cost, and in the same elegant style as at Paris or London. They are situated chiefly on the S. side of the Neva, either in the Admiralty quarter, or in the suburbs of Livonia and Moscow, which are the finest parts of the city." See NEVA. Mr Coxo calculates the number of inhabitants in Petersburg, at 130,000. An equestrian statue of Peter I. in bronze, of a colossal size, the work of Monsieur Falconet, the celebrated French statuary, was cast at the expense of Catherine II. in honour of her great predecessor. Mr Coxo gives a particular description of it. The statue was erected on the 27th of August, 1782, upon a pedestal of a most prodigious magnitude; the stone when landed, (a labour of 6 months) being 42 feet long at the base, 36 at the top, 21 thick and 17 high; a bulk greatly surpassing in weight the most boasted monuments of Roman grandeur. The weather is extremely changeable in this capital, and the cold is at times extreme. It sometimes happens that coachmen or servants, while they are waiting for their masters, are frozen to death. To prevent these dreadful accidents, great fires of whole trees, piled, one upon another, are kindled in the court-yard of the palace and the most frequented parts of the town." Petersburg is 300 miles NE. of Stockholm, 355 NW. of Moscow, 540. NNE. of Warsaw, 545 NE. of Copenhagen, and 750. NE. of Vienna. Lon. 30. 25. E. Lat. 59. 26' 23" N.

(1.) PETERSBURG, a province or government of Russia, called also *Ingria*. See INGRIA, INGRISANS, and ISCHORTZI.

(3.) PETERSBURG, a town of Osnaburg, one mile S. of Osnaburg.

(4.) PETERSBURG, a town of the United States, in Georgia, 40 miles NW. of Augusta. Lon. 82. 20. W. Lat. 33. 55. N.

(5.) PETERSBURG, a town of Kentucky, seated on the Kentucky; 12 miles SE. of Frankfort.

(6.) PETERSBURG, a town of Pennsylvania, 20 miles SW. of New York.

(7.) PETERSBURG, a sea-port town of Virginia, 25 miles S. of Richmond, on the south side of the Appamatox river, 12 miles above its junction with James River, and contained nearly 300 houses in 1787. There is no regularity, and very little elegance in Petersburg. It is very unhealthy. It has a corporation; and is seated on part of 3 counties.

PETERSDORF, a town of Prussia, in Smaaland; 24 miles E. of Königsberg.

PETERSFIELD, a handsome town of Hampshire on the Loddon; 18 miles NE. of Portsmouth, and 53 SW. of London. It sends two members to parliament. Lon. 1. 5. W. Lat. 51. 5. N.

PETERSHAGEN, a town of Germany in

Westphalia, in the county of Minden, on the Weser; 3 miles N. of Minden, says Brooks, but 14 according to Cruttwell; and 37. W. of Hanover; belonging to the K. of Prussia. Lon. 9. 6. E. Lat. 52. 25. N.

(1.) PETERSHAM, a small town of Surry, on the Thames, on the S. side of Richmond Hill, 10 miles WSW. of London.

(2.) PETERSHAM, a town of Massachusetts, 50 miles W. of Boston.

PETERSHAUSEN, a town and princely abbey of Suabia, founded A. D. 980; near Constance, from which it is separated by a branch of the lake.

PETER'S ISLAND, ST, in the lake of Bienné in the Helvetic republic, remarkable for being one of the retreats of Rousseau; whence it has also got the name of ROUSSEAU'S ISLAND. It lies towards the S. side of the lake, and commands very delightful views. There is only one farm-house on the island, in an apartment of which Rousseau was lodged.

PETERSKIRCHEN, a town of Germany, in Austria; 5 miles N. of Sonneberg.

PETER'S LAKE, ST, a lake of N. America, which runs into the St Laurence. Its centre is 68 miles above Quebec.

PETER'S POINT, a cape of Lincolnshire; 4 miles SE. of the mouth of the Witham.

(1.) PETER'S, ST, a town of Antigua.

(2.) PETER'S, ST, a sea port town of Cape Breton; at the S. end of the island; on an isthmus, 10 miles NE. of Point Touloufe.

(3.) PETER'S ST, one of the VIRGIN ISLES.

(4.) PETER'S ST, a river on the coast of Labrador, 12 miles from Belleisle.

(5.) PETER'S ST, a river of the United States, one of the NW. branches of the Mississippi; which it joins in Lon. 94. 22. W. Lat. 45. 6. N.

PETERSTAL, ST, a town of Germany in the late archbishopric of Strasburg; 6 miles S. of OFFENAU.

PETERSWALD, a town of Bohemia, in Leitmeritz; 18 miles NNW. of Leitmeritz.

PETERWARADIN, or } a fortified town of

(1.) PETER-WARDEIN, } Slavonia, and one of the strongest frontier places the house of Austria has against the Turks, seated on the Danube between the Drave and the Save. Lon. 20. 30. E. Lat. 45. 20. N.

(2.) PETER-WARDEIN, a fort of Hungary, on the N. bank of the Danube, opposite the above town.

* PETER-WORT. n. f. [*Acyren*.] A plant.

PETESIA, in botany, a genus of the monogynia order, belonging to the tetrandria class of plants.

(1.) PETHERTON, NORTH, a town of Somersetshire, with a market on Saturday, 8 miles NE. of Taunton, and 140 W. of London.

(2.) PETHERTON, SOUTH, a town of Somersetshire, with a market on Tuesday on the Parret, 8 miles SW. of Ilchester, 18 S. by W. of Wells, and 133 W. by S. of London. Lon. 2. 41. E. Lat. 50. 56. N.

PETIGLIANO, a town of Etruria, in the Siennese; 8 miles W. of Castro, 27. NE. of Orbicello, 45 SE. of Sienna. Lon. 11. 42. E. Lat. 41. 23. N.

PETILIA. See PETELIA, and STRONGOLI. PETINA,

PETINA, a town of Naples, in Principato Citra.

PETIOLARUS CIRRHUS. } See BOTANY,
PETIOLATUM FOLIUM. } *Glossary.*

PETIOLE, in botany, the slender stalks that support the leaves of a plant.

PETIOLUS. See BOTANY, *Index.*

PETIS DE LA CROIX, Francis, a learned French writer, who was sent into Turkey and Persia, at the age of 16, to learn the oriental languages; and became interpreter to Lewis XIV. by whom he was employed in various negotiations. He wrote part of the life of Lewis XIV. in Arabic, a work much esteemed in the East. He died in 1713. He is mentioned with approbation by Voltaire. He understood the Arabic, Turkish, Persian, Tartarian, Ethiopian, and Armenian languages.

PETISTAGUIT, a river of Canada, which runs into the St Lawrence, in Lon. 66. 26. W. Lat. 50. 0. N.

(1.) **PETIT**, John, a doctor of the Sorbonne, who very early gained a character by his knowledge, and eloquent orations pronounced before the university of Paris. He was employed in the famous embassy which was sent from France to Rome, for the purpose of healing the schism in 1407; but what chiefly procured him notoriety was his defence of the murder of Lewis D. of Orleans, only brother to Charles VI.; maintaining, in a public disputation at Paris, the 8th of March 1408, that the murder was lawful, and that "it is allowable to employ fraud, treason, and every other method, however base, to get rid of a tyrant." Petit died in 1511, at Heliain.

(2.) **PETIT**, John Lewis, an eminent surgeon, born at Paris in 1674. He was received master in surgery in 1700; and acquired such reputation in that art, that in 1726 the king of Poland sent for him to his court, and in 1734 the king of Spain prevailed on him to go into that kingdom. He restored the health of those princes; and they endeavoured to detain him by offering him great advantages, but he chose rather to return to France. He was received into the academy of sciences in 1715; became director of the royal academy of surgery; made several important discoveries; and invented new instruments for the improvement of surgery. He died at Paris in 1750. He wrote an excellent Treatise on the Diseases of the Bones, the best edition of which is that of 1723; and many learned dissertations in the Memoirs of the Academy of Sciences, and in the Memoirs of Surgery, vol. 1.

(3.) **PETIT**, Peter, an eminent French mathematician, born at Montluçon in 1589. By Richelieu's influence he became engineer to the king, and intendant of fortifications; and was sent into Italy on the king's business. He wrote several works upon physical and astronomical subjects, and died in 1667.

(4.) **PETIT**, Peter, M. D. a learned French physician, born at Paris in 1617. He graduated at Montpellier; but preferred literary pursuits to medicine. He became preceptor to the sons of the president Lamoignon. He wrote many pieces in Latin prose and verse; and was deeply versed in

Greek and Roman literature and philosophy. He died in 1687, aged 70.

(5.) **PETIT**, Samuel, a learned Frenchman, born at Nismes in 1564. He studied at Geneva, where he became professor of Greek, Hebrew, and theology. He published *Leges Atticae*, Paris, 1615 and 1633.

(6.) * **PETIT**, *adj.* [French.] Small; inconsiderable.—By what small *petit* hints does the mind recover a vanishing notion? *South.*

(7.) **PETITE GUERRE** denotes the operations of detached parties, and the war of posts. See WAR, Part III.

(8.) **PETIT PORT**, a town on the W. coast of Newfoundland.

(9.) **PETIT PORT**, a town on the coast of Peru,

(10.) **PETIT SERGEANTY.** See SERGEANTY.

(11.) **PETIT TERRE**, one of the Caribbee islands, near Defcada. Lon. 61. 11. W. Lat. 16. 14. N.

(12.) **PETIT TREASON.** See TREASON.

PETIT-CODIAC, a river of N. America, which runs into the Bay of Fundy. It has a communication with St John's River.

PETIT-GUAVES, a town, jurisdiction, and bay, on the N. coast of the S. peninsula of Hispaniola, near the head of the bay of Leogane. It appears to be the same with Little Goave. See GOAVES, N° 2. Lon. 72. 25. W. Lat. 18. 27. N.

(1.) * **PETITION**, *n. f.* [*petitio*, Latin.] 1. Request; intreaty; supplication; prayer.—We must propose unto all men certain *petitions* incident and very material in causes of this nature. *Hooker.*

My next poor *petition*

Is, that his noble grace would have some pity
Upon my wretched women. *Shak.*

—Let my life be given at my *petition*, and my people at my request. *Ezher* vii. 3.—A house of prayer and *petition* for thy people. 1 *Mac.* vii.—We must send up *petitions* and thoughts now and then to heaven. *Law.* 2. Single branch or article of a prayer.—

This last *petition* heard of all her pray'r. *Dryd.*

(2.) **PETITION**, in law, is a supplication made by an inferior to a superior, and especially to one having jurisdiction. It is used for that remedy which the subject hath to help a wrong done by the king, who hath a prerogative not to be sued by writ: In which sense it is either general, That the king do him right; whereupon follows a general indorsement upon the same, *Let right be done the party*: Or it is special, when the conclusion and indorsement are special for this or that to be done, &c. By statute, the soliciting, labouring, or procuring the putting the hands or consent of above 20 persons to any petition to the king or either house of parliament, for alterations in church or state, unless by assent of three or more justices of the peace of the county, or a majority of the grand jury at the assizes or sessions, &c. and repairing to the king or parliament to deliver such petition with above the number of ten persons, is subject to a fine of 100l. and three months imprisonment, being proved by two witnesses within six months, in the court of B. R. or at the assizes, &c. And if what is required by this statute be observed, care must be taken that petitions to the king contain nothing which may be interpreted to

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reflect on the administration; for if they do, it may come under the denomination of a libel: and it is remarkable, that the petition of the city of London for the fitting of a parliament was deemed libellous, because it suggested that the king's dissolving a late parliament was an obstruction of justice; also the petition of the seven bishops sent to the Tower by James II. was called a libel, &c. To subscribe a petition to the king, *to frighten him into a change of his measures, intimating, that if it be denied, many thousands of his subjects will be discontented, &c.* is included among the contempts against the king's person and government, tending to weaken the same, and is punishable by fine and imprisonment.

* **PETITION. v. a.** [from the noun.] To solicit; to supplicate.—

You have *petition'd* all the gods

For my prosperity.

Shak.

—The mother *petitioned* her goddess to bestow upon them the greatest gift that could be given.

Addison.

* **PETITIONARILY. adv.** [from *petitionary*.] By way of begging the question.—This doth but *petitionarily* impart a dexterity in the heavens.

Brown.

* **PETITIONARY. adj.** [from *petition*.] 1. Supplicatory; coming with petitions.—

Pardon thy *petitionary* countrymen.

Shak.

It is our bale *petitionary* breath

That blows 'em to this greatness.

2. Containing petitions or requests.—*Petitionary* prayer belongeth only to such as are in themselves impotent. *Hooker*.—I return only yes or no to *petitionary* and *petitionary* epistles. *Swift*.

* **PETITIONER. n. s.** [from *petition*.] One who offers a petition.—When you have received the petitions, and it will please the *petitioners* well to deliver them into your hand. *Bacon*.—What pleasure can it be to be encumbered with dependences, thronged and surrounded with *petitioners*? *South*.—Their prayers are to the reproach of the *petitioners*. *L'Estrange*.—

Tears, the dumb *petitioners* of grief.

—The Roman matrons presented a petition to the fathers; this raised so much rallery upon the *petitioners*, that the ladies never again offered to direct the lawgivers of their country. *Aldison*.

PETITIO PRINCIPII, in logic, the taking a thing for true, and drawing conclusions from it as such, when it is really false, or at least wants to be proved before any inferences can be drawn from it.

(1.) * **PETITORY. adj.** [*petitorius*, Lat. *petitiore*, Fr.] Petitioning; claiming the property of any thing. *Ainsworth*.

(2.) **PETITORY ACTION**, in Scots law. See *LAW*, Part III. Chap. III. Sect. I.

PETITOT, John, a curious painter in enamel, born at Geneva in 1609. He arrived to a degree of perfection that may almost be accounted inimitable. He, however, only painted the heads and hands of the figures; the hair, grounds, and drapery, being executed by Bordier, his brother-in-law. These two artists had the credit of labouring together for 50 years in the greatest harmony. He painted the portraits of Charles I. and his family. He then went to Paris, where he was highly

favoured by Lewis XIV. and acquired an ample fortune. Being a Protestant, the revocation of the edict of Nantes obliged him to retire to Geneva; but settling soon after at Veray in Bern, he passed the remainder of his life in affluence. He died in 1691, and had 17 children; of whom one took to painting, and settled at London, where he gained reputation; but was much inferior to his father. Petitot may be called the *inventor* of painting portraits in enamel. He made use of gold and silver plates, and seldom enamelled on copper. His price was 20 louisets a head, which he soon raised to 40.

PETITIERRE, Ferdinand Oliver, an eminent Protestant French divine, who flourished about the beginning of the 18th century. He was minister of a church in Chaux De Fond, and published a work entitled, *Thoughts on the Divine Goodness*; divided into three chapters, containing the Definition, Proofs, and Consequences, of the infinite goodness of God. This work has gone through many editions, and has been translated into English and other languages. But one of the chief tenets included in it, being, that the state of future punishment (which, however, he places in a most terrific point of view) is not eternal, and that all men will be finally happy, he was first prohibited from preaching, and afterwards deposed. A translation of this work was published at Edinburgh in 1799, 12mo.

PETIVER, James, F. R. S. an eminent English botanist, contemporary with Plukenet. He was bred an apothecary with Mr Feltham, of St Bartholomew's hospital. He settled in Aldersgate Street, and became apothecary to the Charterhouse. He made a collection in natural history, so valuable, that Sir Hans Sloane offered him 4000l. for it before his death, and purchased it afterwards. He was elected F. R. S. and assisted Ray in the 2d vol. of his *History of Plants*. He engaged the captains and surgeons of ships to bring him home specimens of foreign plants; and enabled them to select proper objects by printed directions. He wrote, 1. *Musci Petiveriani centuria decem*; 1692—1703; 8vo. 2. *Gawophylacii Naturæ et Artis decus decem*; fol. 1702, with 100 plates. 3. A Catalogue of Mr Ray's English Herbal; fol. 1713 to 1715. 4. Many small tracts enumerated in Dr Pultney's book. 5. Many papers in the *Philos. Transf.* 6. *Plantæ rarioræ Clineses, Madagascanae, et Africanæ*, &c. in Ray's 3d vol. His works were reprinted in 1764, in 2 vols. fol. and one 8vo. He died 26th April 1718; and his funeral was honoured by the literati.

PETIVERIA, in botany, *Guinea Hen-wort*, a genus of the tetragynia order, belonging to the hexandria class of plants; and in the natural method ranking under the 12th order, *Holeraceæ*. The calyx is tetraphyllous; there is no corolla; and but one seed, with reflexed awns at the top.

PETKUM, a town of Germany, in East Frisia, land, 3 miles SE. of Emden.

(1.) **PETOUNE HOTUN**, a town of Chinese Tartary, in Kirin Oula; 485 miles NE. of Peking. Lon. 142. 20. E. Ferro. Lat. 45. 15. N.

(2.) **PETOUNE KIAMEN**, a port of Chinese Tartary; 9 miles NW. of Petoune Hotun.

(1.) **PETRA**, a town of Greece, on the coast of

of Illyricum near Dyrrhachium and the mouth of the Panyasus. *Cæf. Lucian.*

(2.) **PETRA**, a town of Mædica, a district of Thrace, lying towards Macedonia; but in what part of Macedonia Livy does not say.

(3.) **PETRA**, **PETREA**, or **PETRINA**, (*urbs* being understood) an inland town of Sicily, SW. of Engyum; now called **PETRAGLIA**. *Cluverius, Ptol. Sil. Ital.*

(4—7.) **PETRA** was also the name of 4 other ancient towns: viz. 1. in Pieria in Macedonia; (*Liv. Cic.*) 2. near Dyrrhachium. (*Lucan. Cæf.*) 3. in Elis; and 4. near Corinth.

(8.) **PETRA**, a town in the isle of Metelin.

(9.) **PETRA**, a town of Sicily, in Mazara; 2 miles NNW. of Girgenti.

(10.) **PETRA**, a river of Naples, which runs into the sea; 13 miles NE. of Bova.

(11.) **PETRA JECKTAEL**, a town of the Amalekites, near the Adscensus Scorpionis, and the valley of Salt in the S. of Judæa; afterwards in the possession of the Edomites, after destroying the Amalekites. 2 Kings xiv. Judges i.

(12.) **PETRA RECEM**, or **REKEM**, so called from Rekem king of the Midianites, slain by the Israelites; (Num. xxxi.) a town of Arabia, formerly called *Arce*, or *Petra*: the capital of Arabia *Petræa*. (*Josephus*.) Ptolemy places it in Lon. 66. 45. from the Fortunate Islands, and Lat. 30. 20. It declines 80 miles to the S. of the parallel of Jerusalem, and 36 miles, more or less, from its meridian to the E.; Josephus says, that the mountain on which Aaron died, stood near Petra; which Strabo calls the capital of the Nabatæi; at the distance of three or four days journey from Jericho. This Petra seems to be the *Sela* of Isaiah xvi. 1. and xlii. 11. from the Hebrew name, *Petra*, a rock: But some imagine Petra to be no older than the time of the Macedonians.

PETRÆ. See **MINERALOGY**, Part II. *Chop. II.*

PETRÆA. See **PETRA**, N° 3.

PETRAFITTA, a town of Naples, in Calabria Citra; 5 miles ESE. of Cosenza.

PETRAGLIA, a town of Sicily. See **PETRA**, N° 3.

PETRARCH, Francis, a celebrated Italian poet, born at Arezzo in 1304. He studied grammar, rhetoric, and philosophy, 4 years, at Capentras; whence he went to Montpellier, where he studied the law. His father and mother dying of the plague at Avignon, he returned to that city, when 22 years of age, to settle his domestic affairs, and purchased a country house in a very solitary but agreeable situation, called *Vaucluse*; where he first saw the beautiful Laura, with whom he fell in love, and whom he has immortalized in his poems. He travelled into France, the Netherlands, and Germany; and at his return to Avignon, entered into the service of Pope John XXII. who employed him in several important affairs. Petrarch expected some considerable posts; but being disappointed, he applied himself entirely to poetry; in which he met with such applause, that in the same day he received letters from Rome and Paris inviting him to receive the poetic crown. He preferred Rome, and received that crown from the senate and people on the 8th

April 1347. His love of solitude at length induced him to return to Vaucluse; but, after the death of the beautiful Laura, Provence became insupportable to him, and he returned to Italy in 1352; when, being at Milan, Galeas Visconti made him counsellor of state. Petrarch spent almost all the rest of his life in travelling to and from the different cities in Italy. He was archdeacon of Parma, and canon of Padua; but never received the order of priesthood. All the princes and great men of his time gave him public marks of their esteem; and while he lived at Arquæ, 3 miles from Padua, the Florentines sent Boccaccio to him with letters, inviting him to Florence, and informing him, that they restored to him all the estate of which his father and mother had been deprived during the dissensions between the Guelphs and Ghibelines. He died a few years after at Arquæ, in 1374. He wrote many works that have rendered his memory immortal; printed in 4 volumes folio. His life has been written by several authors; particularly by Mrs Susanna Dobson, in 2 vols. 8vo.

PETRASTRUMIA, a town of Naples in Principato Ultra; 9 miles S. of Benevento.

PETRATSCHEN, a town of Prussian Lithuania, 4 miles WSW. of Ragnitz.

(1.) * **PETRE**, *n. f.* [from *petra*, a stone.] Nitre; salt petre. See **NITRE**.—Powder made of impure and greasy *petre*, hath but a weak emission, and gives but a faint report. *Brown*.—The vessel was first well sealed to prevent cracking, and covered to prevent the falling in of any thing that might unseasonably kindle the *petre*. *Boyle*.—Nitre, when it is in its native state, is called *petre-salt*, when refined salt-*petre*. *Woodward*.

(2.) **PETRE**, or **SALT PETRE**, in Chemistry. See **CHEMISTRY**, *Index*, and **NITRE**.

PETREA, in botany, a genus of the angiospermia order, belonging to the didynamia class of plants; and in the natural method ranking under the 40th order, *Personate*. The calyx is quinquepartite, very large, and coloured; the corolla rotaceous; the capsule bilocular, and situated in the bottom of the calyx; the seeds solitary. There is only one species, a native of New Spain. It rises to 15 or 16 feet, with a woody stalk covered with grey bark, sending out several long branches. These have a whiter bark than the stem, and are garnished with leaves at each joint, which, on the lower part of the branches, are placed by three round them; but higher up, they are rough, and have a rough surface. The flowers are produced at the ends of the branches, in loose bunches 9 or 10 inches long, each flower standing on a slender flower-stalk about an inch long; the empalement of the flower is composed of 5 narrow obtuse leaves about an inch long, which are of a fine blue colour, and much more conspicuous than the petals which are white, and not more than half the length of the empalement. The plant is propagated by seeds procured from the places where they are natives, and of which very few are good. The seeds must be sown in a good hot-bed; and when the plants come up, they should all be planted in a separate small pot filled with light loamy earth, and plunged into a

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hot-bed of tanners bark, where they should afterwards constantly remain.

PETREL, *n. f.* See PROCELLARIA, N° 1. & 2.

(1.) PETRELLA, a town of Naples, in Molise; 11 miles E. of Molise.

(2.) PETRELLA, a town of European Turkey, in Albania; 26 miles SE. of Durazzo.

* PETRESCENT, *adj.* [*petrescens*, Lat.] Growing stone; becoming stone.—A cave, from whose arched roof there dropped down a *petrescent* liquor. *Boyle*.

PETRI, a town of Africa, on the Ivory Coast.

PETRICOW, a town of Bohemia, in Chrudim; 9 miles S. of Chrudim.

PETRIDIA, in the old system of mineralogy, a genus of scrapi, of a plain, uniform texture; of 110 great variety of colours, and emulating the external form of pebbles.

(1.) * PETRIFICATION, *n. f.* [from *petrifico*, Lat.]

1. The act of turning to stone; the state of being turned to stone.—Its concretion spirit has the seeds of *petrification* and gorgon within itself. *Brown*. 2. That which is made stone.—Beautiful shells, *petrifications*, ores, minerals, stones, and other natural curiosities. *Cheyne*.

(2.) PETRIFICATION, in physiology, denotes the conversion of wood, bones, and other substances, principally animal or vegetable, into stone. These bodies are more or less altered from their original state, according to the different substances they have lain buried among in the earth; some of them having suffered very little change, and others being so highly impregnated with crystalline, sparry, pyritical, or other extraneous matter, as to appear mere masses of stone, or lumps of the matter of the common pyrites; but they are generally of the external dimensions, and retain more or less of the internal figure, of the bodies into the pores of which this matter has made its way. The animal substances thus found petrified are chiefly sea-shells; the teeth, bony palates, and bones of fish; the bones of land animals, &c. These are found variously altered, by the insinuation of stony and mineral matter into their pores; and the substance of some of them is now wholly gone, there being only stony, sparry, or other mineral matter remaining in their shape and form.

(3.) PETRIFICATION, DISCOVERIES RESPECTING. Respecting the manner in which petrification is accomplished, we know little. It has been thought by many philosophers, that this was one of the rare processes of nature; and accordingly such places as afforded a view of it, have been looked upon as great curiosities. However, it is now discovered, that petrification is exceedingly common; and that every kind of water carries in it some earthy particles, which being precipitated from it, become stone of a greater or lesser degree of hardness; and this quality is most remarkable in those waters, which are much impregnated with selenitic matter. Of late, it has also been found by some observations of a petrification in East Lothian, that iron contributes greatly to the process; and this it may do by its precipitation of any aluminous earth which happens to be dissolved in the water by means of an acid; for iron has the property of precipitating this earth, though it cannot precipitate the calcareous

kind. The calcareous kinds of earth, however, by being soluble in water without any acid, must contribute very much to the process of petrification, as they are capable of a great degree of hardness by means of being joined with fixed air, on which depends the solidity of our common cement or mortar used in building houses. The name *petrification* belongs only to bodies of vegetable or animal origin; and to determine their class and genus, or even species, it is necessary that their texture, their primitive form, and in some measure their organization, be still discernible. Thus we ought not to place the stony kernels, moulded in the cavity of some shell, or other organized body, in the rank of petrifications properly so called.

(4.) PETRIFICATION, FORMATION, CAUSES AND PROGRESS OF. Petrifications of the vegetable kingdom are almost all either gravelly or siliceous; and are found in gullies, trenches, &c. Those which strike fire with steel are principally found in sandy fissures; those which effervesce in acids are generally of animal origin, and are found in the horizontal beds of calcareous earth, and sometimes in beds of clay or gravel; in which case the nature of the petrification is different. As to the substances which are found in gypsum, they seldom undergo any alteration, either with respect to figure or composition, and they are very rare. Organized bodies, in a state of petrification, generally acquire a degree of solidity of which they were not possessed before they were buried in the earth; and some of them are often fully as hard as the stones or matrices in which they are enveloped. When the stones are broken, the fragments of petrifications are easily found, and easily distinguished. There are some organized bodies, however, so changed by petrification, as to render it impossible to discover their origin. That there is a matter more or less agitated, and adapted for penetrating bodies, which crumbles and separates their parts, draws them along with it, and disperses them here and there in the fluid which surrounds them, is a fact of which nobody seems to entertain any doubt. Indeed we see almost every substance, whether solid or liquid, insensibly consume, diminish in bulk, and at last, in the lapse of time, vanish and disappear. A petrified substance, strictly speaking, is nothing more than the skeleton, or perhaps image of a body which has once had life, either animal or vegetable, combined with some mineral. Thus petrified wood is not in that state wood alone. One part of the compound or mass of wood having been destroyed by local causes, has been compensated by earthy and sandy substances, diluted and extremely minute, which the waters surrounding them had deposited while they themselves evaporated. These earthy substances, being then moulded in the skeleton, will be more or less indurated, and will appear to have its figure, its structure, its size, in a word, the same general characters, the same specific attributes, and the same individual differences. Farther, in petrified wood, no vestige of ligneous matter appears to exist. We know that common wood is a body in which the volume of solid parts is greatly exceeded by that of the pores. When wood is buried in certain places, lapidific fluids extremely

extremely divided and sometimes coloured, insinuate themselves into its pores and fill them up. These fluids are afterwards moulded and condensed. The solid part of the wood is decomposed and reduced into powder, which is expelled without the mass by aqueous filtrations. In this manner, the places which were formerly occupied by the wood are now left empty in the form of pores. This operation of nature produces no apparent difference, either of the size or of the shape; but it occasions, both at the surface and in the inside, a change of substance, and the ligneous texture is inverted; that is to say, that which was pore in the natural wood, becomes solid in that which is petrified; and that which was solid or full in the first state, becomes porous in the second. In this way, says M. Mufard, petrified wood is much less extended in pores than solid parts, and at the same time forms a body much more dense and heavy than the first. As the pores communicate from the circumference to the centre, the petrification ought to begin at the centre, and end with the circumference of the organic body subjected to the action of the lapidific fluids. Such is the origin of petrifications. They are organized bodies which have undergone changes at the bottom of the sea or the surface of the earth, and which have been buried by various accidents at different depths under the ground. To understand properly the detail of the formation of petrified bodies, it is necessary to be well acquainted with all their constituent parts. Let us take wood for an example. Wood is partly solid and partly porous. The solid parts consist of a substance, hard, ligneous, and compact, which forms the support of the vegetable; the porous parts consist of vessels or interstices which run vertically and horizontally across the ligneous fibres, and which serve for conducting air, lymph, and other fluids. Among these vessels, the tracheæ, which rise in spiral forms, and which contain only air, are easily distinguished. The cylindric vessels, some of which contain lymph, and others the *succus proprius*, are full only during the life of the vegetable. After its death they become vacant by the evaporation and absence of the fluids with which they were formerly filled. All these vessels, whether ascending or descending, unite with one another, and form great cavities in the wood and in the bark. According to Malpighi and Duhamel, the ligneous fibres are themselves tubular, and afford a passage to certain liquors; in short, the wood and bark are interspersed with utriculi of different shapes and sizes. The augmentation of the trunk in thickness, according to Malpighi, is accomplished by the annual addition of a new exterior covering of fibres and of tracheæ. Others think that a concentric layer of sap wood is every year hardened, whilst a new one is formed from the bark. But it is on all sides agreed, that the concentric layers of wood are distinct from one another, because at the point of contact betwixt any two of them, the new vessels, as well as new fibres, are more apparent and perceptible than they are in any other place.

(5.) PETRIFICATIONS, M. BERTRAND'S THEORY OF THE CAUSES OF. In order, says M. Bertrand, in his *Dictionnaire des Poisses*, that a body

should become petrified, it is necessary that it be, 1. Capable of preservation under ground: 2. That it be sheltered from the air and running water (the ruins of Herculeaneum prove that bodies which have no connection with free air, preserve themselves untouched and entire). 3. That it be secured from corrosive exhalations. 4. That it be in a place where there are vapours or liquids, loaded either with metallic or stony particles in a state of dissolution, and which, without destroying the body, penetrate it, impregnate it, and unite with it, in proportion as its parts are dissipated by evaporation.

(6.) PETRIFICATION, M. MONGEZ'S THEORY OF. M. Mongez explains the petrification of vegetables as follows: In proportion to the tenderness and bad quality of wood, it imbibes the greater quantity of water; therefore this sort will unquestionably petrify more easily than that which is hard. It is thought that all the petrified wood so often found in Hungary has been originally soft, such as firs or poplars. Suppose a piece of wood buried in the earth; if it be very dry, it will suck up the moisture which surrounds it like a sponge. This moisture, by penetrating it, will dilate all the parts of which it is composed. The tracheæ, or air vessels, will be filled first, and then the lymphatic vessels and those which contain the *succus proprius*, as they are likewise empty. The water which forms this moisture keeps in dissolution a greater or a less quantity of earth; and this earth, detached, and carried along in its course, is reduced to such an attenuated state, that it escapes our eyes and keeps itself suspended, whether by the medium of fixed air or by the motion of the water. Such is the lapidific fluid. Upon evaporation, or the departure of the menstruum, this earth, sand, or metal, again appears in the form of precipitate or sediment in the cavities of the vessels, which by degrees are filled with it. This earth is there moulded with exactness: The lapse of time, the simultaneous and partial attraction of the particles, make them adhere to one another; the lateral suction of the surrounding fibres, the obstruction of the moulds, and the hardening of the moulded earth, become general; and there consists nothing but an earthy substance which prevents the linking of the neighbouring parts. If the deposit is formed of a matter in general pretty pure, it preserves a whiter and clearer colour than the rest of the wood; and as the concentric layers are only perceptible and distinct in the wood, because the vessels are there more apparent on account of their size, the little earthy cylinders, in the state of petrified wood, must be there a little larger, and consequently must represent exactly the turnings and separations of these layers. At the places of the utriculi, globules are observed, of which the shapes are as various as the moulds wherein they are formed. The anastomoses of the proper and lymphatic vessels, form, besides, points of support or reunion for this stony substance. With regard to holes formed by worms in any bits of wood, before they had been buried in the earth, the lapidific fluid, in penetrating these great cavities, deposits there as easily the earthy sediment, which is exactly moulded in them. These vermiform cylinders are somewhat less

less in bulk than the holes in which they are found, which is owing to the retreat of the more refined earth, and to its drying up. Let any one represent to himself this collection of little cylinders, vertical, horizontal, inclined in different directions, the stony masses of utriculi and of anastomoses, and he will have an idea of the stony substance which forms the ground work of petrification. Hitherto not a single ligneous part is destroyed; they are all existing, but surrounded on every side with earthy deposits; and that body which, during life, was composed of solid and of empty parts, is now entirely solid; its destruction and decomposition do not take place till after the formation of these little deposits. In proportion as the water abandons them, it penetrates the ligneous substance, and destroys it by an insensible fermentation. The woody fibres being decomposed, form in their turn voids and interstices, and there remains in the whole piece nothing but little stony cylinders. But in proportion as these woody fibres disappear, the surrounding moisture, loaded with earth in the state of dissolution, does not fail to penetrate the piece of wood, and to remain in its new cavities. The new deposit assumes exactly the form of the decomposed fibres; it envelopes in its turn the little cylinders which were formed in their cavities, and ends by incorporating with them. We may suppose here, that in proportion as it decomposes, there is a reaction of the ligneous part against the lapidific fluid: from this reaction a colour arises which stains more or less the new deposit; and this colour will make it easily distinguishable from that which has been laid in the inside of the vessels. In all petrified wood this shade is generally perceptible. We have then, says M. Mongez, 4 distinct epochs in the process by which nature converts a piece of wood into stone, or, to speak more justly, by which she substitutes a stony deposit in its place: 1. Perfect vegetable wood, that is to say, wood composed of solid and of empty parts, of ligneous fibres, and of vessels. 2. Wood having its vessels obstructed and choked up by an earthy deposit, while its solid parts remain unaltered. 3. The solid parts attacked and decomposed, forming new cavities betwixt the stony cylinders, which remain in the same state, and which support the whole mass. 4. These new cavities filled with new deposits, which incorporate with the cylinders, and compose nothing else but one general earthy mass representing exactly the piece of wood. Among the petrifications of vegetables called *dendrolites*, are found parts of shrubs, stems, roots, portions of the trunk, some fruits, &c. We must not, however, confound the impressions of mosses, ferns, and leaves, nor incrustations, with petrifications. Among the petrifications of animals, we find shells, crustaceous animals, polyparii, some worms, the bony parts of fishes and of amphibious animals, few or no real insects, rarely birds and quadrupeds, together with the bony portions of the human body. The cornua ammonis are petrified serpents; and with regard to figured and accidental bodies, these are *lusus nature*.

(7.) PETRIFICATION. NATURE'S PERIODS OF ACCOMPLISHING. It is a question of great im-

portance among naturalists, to know the time which Nature employs in petrifying bodies of an ordinary size.—It was the wish of the late emperor, that some means should be taken for determining this question. M. le Chevalier de Baillu, director of the cabinet of natural history of his imperial majesty, and some other naturalists, had, several years ago, the idea of making a research which might throw some light upon it. His imperial majesty being informed by the unanimous observations of modern historians and geographers, that certain pillars which are actually seen in the Danube in Gervia, near Belgrade, are remains of the bridge which Trajan constructed over that river, presumed that these pillars having been preserved for so many ages, behoved to be petrified, and that they would furnish some information with regard to the time which nature employs in changing wood into stone. The emperor (thinking this hope well founded, and wishing to satisfy his curiosity, ordered his ambassador at the court of Constantinople to ask permission to take up from the Danube one of the pillars of Trajan's bridge. The petition was granted, and one of the pillars was accordingly taken up; from which it appeared that the petrification had only advanced three fourths of an inch in the space of 1500 years. There are, however, certain waters in which this transmutation is more readily accomplished.—Petrifications appear to be formed more slowly in earths that are porous and in a slight degree moist, than in water itself. When the foundations of the city of Quebec in Canada were dug up, a petrified savage was found among the last beds to which they proceeded. Although there was no idea of the time at which this man had been buried under the ruins, it is however true, that his quiver and arrows were still well preserved. In digging a lead mine in Derbyshire in 1744, a human skeleton was found among stag horns. It is impossible to say how many ages this carcase had lain there. In 1695 the entire skeleton of an elephant was dug up near Tonna in Thuringia. Some time before this epoch the petrified skeleton of a crocodile was found in the mines of that country. We might cite another fact equally curious, which happened at the beginning of the last century. John Munte, curate of Slægarp in Scania, and several of his parishioners, wishing to procure turf from a drained marshy soil, found, some feet below ground, an entire cart with the skeletons of the horses and carter. It is presumed that there had formerly been a lake in that place, and the carter attempting to pass over on the ice, had by that means probably perished. In fine, wood, partly fossil and partly coal, has been found at a great depth, in the clay of which tile was made for the Abbey of Fontenay. It is but very lately that fossil wood was discovered at the depth of 75 feet in a well betwixt Issi and Vauvres near Paris. This wood was in sand betwixt a bed of clay and pyrites, and water was found four feet lower than the pyrites. M. de Laumont, inspector general of the mines, says (*Journal de Physique*, Mai 1736), that in the lead-mine at Pontpéan near Rennes, is a fissure, perhaps the only one of its kind. In that fissure, sea-shells, rounded pebbles,

and

and an entire beech, have been found 240 feet deep. This beech was laid horizontally in the direction of the fissure. Its bark was converted into pyrites, the sap-wood into jet, and the centre into coal. Many pieces of petrified wood are found in different departments of France, and particularly in that of Mont Blanc, the ci-devant Savoy. In Cobourg in Saxony, and in the mountains of Misnia, trees of a considerable thickness have been taken from the earth; which were entirely changed into a very fine agate, as also their branches and their roots. In sawing them, the annual circles of their growth have been distinguished. Pieces have been taken up, on which it was distinctly seen that they had been gnawed by worms; others bear visible marks of the hatchet. In fine, pieces have been found which were petrified at one end, while the other still remained in the state of wood fit for being burned. It appears then that petrified wood is a great deal less rare in nature than is commonly imagined.

(8.) PETRIFICATION, OBSERVATIONS OF MESSRS. CRONSTEDT AND KIRWAN RESPECTING. Cronstedt has excluded petrifications from any place in the body of his system of mineralogy, but takes notice of them in his appendix. He distinguishes them by the name of *Mineralia Larvata*, and defines them to be "mineral bodies in the form of animals or vegetables." The most remarkable observations concerning them, according to Mr Kirwan, who differs in some particulars from Mongez, are as follow. 1. Those of shells are found on or near the surface of the earth; those of fish deeper; and those of wood deeper still. Shells in substance are found in vast quantities, and at considerable depths. 2. The substances most susceptible of petrification are those which most resist the putrefactive process; of which kind are shells, the harder kinds of wood, &c.; while the softer parts of animals, which easily putrefy, are seldom met with in a petrified state. 3. They are most commonly found in strata of marl, chalk, limestone, or clay; seldom in sandstone, still more seldom in gypsum; and never in gneiss, granite, basalt, or schœrl. Sometimes they are found in pyrites, and ores of iron, copper, and silver; consisting almost always of that kind of earth or other mineral which surrounds them; sometimes of flint, agate, or cornelian. 4. They are found in climates where the animals themselves could not have existed. 5. Those found in slate or clay are compressed and flattened.

(9.) PETRIFICATIONS, CRONSTEDT'S ARRANGEMENT OF. The different species of petrifications, according to Cronstedt, are, 1. *Terre Larvata*; extraneous bodies changed into a limy substance, or calcareous changes. These are, 1. Loose or friable. 2. Indurated. The former are of a chalky nature, in form of vegetables or animals; the second filled with solid limestone in the same forms. Some are found entirely changed into a calcareous spar. All of them are found in France, Sweden, and other countries in great plenty. On these petrifications Cronstedt observes, that shells and corals are composed of limy matter even when still inhabited by their animals, but they are

classed among the petrifications as soon as the calcareous particles have obtained a new arrangement; for example, when they have become sparry; filled with calcareous earth either hardened or loose, or when they lie in the strata of the earth. "These," says he, "form the greatest part of the fossil collections which are so industriously made, often without any regard to the principal and only use they can be of, viz. that of enriching zoology." Mineralogists are satisfied with seeing the possibility of the changes the limestone undergoes in regard to its particles; and also with receiving some insight into the alteration which the earth has been subject to, from the state of the strata which are now found in it." The calcined shells, where the petrifications are of a limy or chalky nature, answer extremely well as a manure; but the indurated kind serve only for making grottoes. Gypsous petrifications are extremely rare; however, Chardin informs us, that he had seen a lizard inclosed in a stone of that kind in Persia. II. *Larvæ*, or bodies changed into a stony substance. These are all indurated, and are of the following species: 1. *Cornelians* in form of shells from the river Tomm in Siberia. 2. Agate in form of wood: a piece of which is said to be in the collection of the Count de Tessin. 3. *Coralloids of white flint (Millepora)* found in Sweden. 4. Wood of yellow flint found in Italy, in Turkey near Adrianople; and produced by the waters of Lough-neagh in Ireland. III. *Larvæ Argillaceæ*; where the bodies appear to be changed into clay. These are found either loose and friable, or indurated. Of the former kind is a piece of porcelain clay, met with in a certain collection, with all the marks of the root of a tree upon it. Of the latter kind is the *osteocolla*; which is said to be the roots of the poplar tree changed, and not to consist of any calcareous substance. A sort of fossil ivory, with all the properties of clay, is said likewise to be found in some places. IV. *Larvæ Insalutæ*; where the substances are impregnated with great quantities of salts. Human bodies have been twice found impregnated with vitriol of iron in the mine of Fab-lun, in the province of Dalarne in Sweden. One of them was kept for several years in a glass case, but at last began to moulder and fall to pieces. Turf and roots of trees are likewise found in water strongly impregnated with vitriol. They do not flame, but look like a coal in a strong fire; neither do they decay in the air. V. Bodies penetrated by mineral inflammable substances. 1. By pit-coal, such as wood; whence some have imagined coal to have been originally produced from wood. Some of these substances are fully saturated with the coal matter; others not. Among the former Cronstedt reckons jet; among the latter the substance called *munia vegetabilis*, which is of a loose texture, resembling amber, and may be used as such. 2. Those penetrated by asphaltum or rock-oil. The only example of these given by our author is a kind of turf in the province of Skone in Sweden. The Egyptian mummies, he observes, cannot have any place among this species, as they are impregnated artificially with asphaltum, in a manner similar to what happens naturally with the wood and coal matter in the last

last species. 3. Those impregnated with sulphur which has dissolved iron, or with *pyrites*. Human bodies, bivalve and univalve shells, and insects, have been all found in this state; and the last are found in the alum slate at Andrarum, in the province of Skone in Sweden. VI. *Larve metallifera*; where the bodies are impregnated with metals. These are, 1. Covered with native silver; which is found on the surface of shells in England. 2. Where the metal is mineralized with copper and sulphur. Of this kind is the Fahletz, or grey silver ore, in the shape of ears of corn, and supposed to be vegetables, found in argillaceous slate at Frankenberg and Tahlitteren in Hesse. 3. *Larve cuprifera*, where the bodies are impregnated with copper. To this species principally belong the Turquoise or Turkey stones, improperly so called; being ivory and bones of the elephant or other animals impregnated with copper. See TURQUOISE. At Simore in the ci-devant Languedoc, there are bones of animals dug up, which, during calcination, assume a blue colour; but, according to Cronstedt, it is not probable that these owe their colour to copper. 3. With mineralized copper. Of these our author gives two examples. One is where the copper is mineralized with sulphur and iron, forming a yellow marcasitical ore. With this some shells are impregnated which lie upon a bed of loadstone in Norway. Other petrifications of this kind are found in the form of fish in different parts of Germany. The other kind is where the copper is impregnated with sulphur and silver. Of this kind is the grey silver ore, like ears of corn, found in the slate quarries at Hesse. 4. *Larve ferrifera*, with iron in form of a calx, which has assumed the place or shape of extraneous bodies. These are either loose or indurated. Of the loose kind are some roots of trees found at the lake Algelsa in Finland. The indurated kinds are exemplified in some wood found at Orbissan in Bohemia. 5. Where the iron is mineralized, as in the *pyritaceous larve*. VII. Where the bodies are tending to decomposition, or in a way of destruction. Among these, our author enumerates MOULD and TURF, which see: also CEMENT, MORTAR, ROCK, SAND, SELENITE, STONE, and WATER. See likewise FOSSIL, and MOUNTAIN.

(10.) PETRIFICATION, SINGULAR ANIMAL. The Abbe De Sauvages, celebrated for his refined taste and knowledge in natural history, in a tour through Languedoc, between Alais and Uzès, met with a narrow vein of no more than two toises wide, which crosses the road, and is bordered on one side by a grey dirty soil, and on the other by a dry sandy earth, each of a vast extent, and on a level with the narrow vein which separates them. In this narrow vein only are contained petrified shells, cemented together by a whitish marl. They are in prodigious plenty; among which there is one species which the Abbe does not remember to have any where described. This shell has the shape of a horn, somewhat incurved towards the base. (See fig. 9. plate CCLXXXIII.) It seems composed of several cups, let into each other, which are sometimes found separate. They have all deep channels, which extend, as in many other shells, from the base to the aperture; the

projecting ribs which form these channels are mostly worn away, being rarely to be found entire. Sometimes several are grouped together; and as a proof that they are not a fortuitous assemblage caused by the petrification, they are fixed together through their whole length, in such sort, that their base and aperture are regularly turned the same way. The Abbé should have referred this to the genus which Linnæus and the Marquis d'Argenville named *dentalis*, had they not been let into each other. He found some of them whose aperture or hollow was not stopped up by the petrification, and seemed as cones adapted to one another (fig. 10), forming a row of narrow cells, separated by a very thin partition: this row occupied not more than one half of the cavity of the shell.—Fossil bones are very common in Dalmatia. They are of various kinds, and in their nature apparently very extraordinary; but we have found no tolerable account or probable conjecture of their origin. Vitaliano Donati of Padua, in his *Saggio sopra la storia naturale dell' Adriatico*, was the first who took notice of them; and Fortis, in his travels into Dalmatia, has given a copious account of them. They are most common in the islands of CHERSIO and OSERO. See FOETIS'S Travels into Dalmatia, page 440—465, and VITALIANO.

* PETRIFACTIVE. *adj.* [from *petrificio*, Lat.] Having the power to form stone.—There are many to be found, which are but the lapidescences and *petrifiactive* mutation of bodies. *Brown.*

* PETRIFICATION. *n. f.* [*petrification*, Fr. from *petrify*.] A body formed by changing other matter to stone.—In these strange petrifications, the hardening of the bodies seems to be effected principally, if not only, by altering the disposition of their parts. *Boyle.*

* PETRIFIC. *adj.* [*petrificus*, Lat.] Having the power to change to stone.—

Winter's breath,

A nitrous blast that strikes petrific death. *Savage.*

Death with his mace petrific, cold and dry,
As with a trident, smote. *Milt. Par. Lost.*

(1.) PETRIFIED, *part. adj.* changed into stone,

(2.) PETRIFIED CITY. The story of a petrified city is well known all over Africa, and has been believed by many considerable persons even in Europe. Lewis XIV. was so fully persuaded of its reality, that he ordered his ambassador to procure the body of a man petrified from it at any price. Dr Shaw's account of this affair is decisive, that it is all a cheat and imposition; that M. Le Maire, the French consul at Tripoli, about 1720, made great inquiries into the truth of the report; but, though he detected the cheat, complied with the custom of the district of Ras Sem so far, as to throw away 1000 dollars for a mutilated image of Cupid, which the pretended searchers brought to him as they said, from Ras Sem, at the risk of their lives, but which, he learned afterwards, they had found among the ruins of *Leptis*; and to conceal the deceit, had broken off the quiver, wings, and other characteristics of the deity. However, there is one remarkable circumstance relating to Ras Sem that deserves to be recorded. When the winds have blown away the billows of sand which frequently cover and conceal these petrifications, they discover.

ver, in some of the lower and more depressed places of this district, several little pools of water, which is usually of so ponderous a nature, that, upon drinking it, it passes through the body like quicksilver. This perhaps may be that petrifying fluid which has all along contributed to the conversion of the palm-trees and the echini into stone.

(1.) * To PETRIFY, *v. a.* [*petrifier*, Fr. *petra* and *fo*, Lat.] 1. To change to stone.—

A few resemble petrified wood. Woodward.
2. To make callous; to make obdurate.—Schism is marked out by the apostle to the Hebrews, as a kind of petrifying crime. *Decay of Piety*.—Though their souls be not yet wholly petrified, yet every act of sin makes gradual approaches to it. *Decay of Piety*.—

Full in the midst of Euclid dip at once,
And petrify a genius to a dunce. *Pope*.

Who coin the face, and petrify the heart. *Young*.

(2.) * To PETRIFY, *v. n.* To become stone.—
Like Niobe we marble grow,

And petrify with grief. *Dryden*.

PETRIFYING WATERS are numerous in Scotland. The river of Ayr, in Ayrshire, has been long known to possess a strong petrifying power; and the water of Ayr Stones, which are nothing but wood petrified in that river, are universally known, as the best substances for making hones for razors. There are also several springs of this kind in Roxburgh-shire. "One is found (says the rev. J. Arkle) on the Tweeden, exceedingly powerful, and containing a great quantity of water, where large masses of petrified matter appear on every side converted into solid stone. The progress of the petrification is distinct and beautiful. The fog, which grows on the edge of the spring, and is sprinkled with water, is about 3 inches high; the lower part is converted into solid stone; the middle appears as if half frozen, and the top is green and flourishing. The petrified matter, when burnt, is resolved into very fine lime. The spring itself, when led over the fields in little rills, fertilizes them exceedingly." *Sir J. Sinclair's Stat. Acc.* Vol. XVI. p. 78.

PETRIKOW, or PETERKAW, a town of Poland, in the palatinate of Siradia; 48 miles ESE. of Siradia, and 80 SW. of Warsaw. Diets were anciently held, and the kings of Poland elected in it. In 1641, and 1731, it was burnt. Lon. 19. 46. E. Lat. 51. 12. N.

(1.) PETRINA, an ancient town of Sicily, now called PETRAGLIA. See PETRA, N° 3.

(2.) PETRINA, or PETRINIA, a river of Croatia, which rises near Petrinia Pusta, and runs into the Kulpa, near Petrinia.

(3.) PETRINA, or } a strong town of Croatia, on
(1.) PETRINIA, } the S. bank of the Kulpa,
built in 1592, by Assin Pacha. It was taken in 1592, and its fortifications destroyed by the archduke Maximilian. In 1595, while the Turks were repairing it, it was taken by Robert De Eggenburg. In 1696, the Turks attempted to retake it, but were repulsed. In 1702, however, they took it, but restored it to Austria at the peace. It is 27 miles E. of Carlsstadt, and 156 S. of Vienna. Lon. 16. 0. E. Lat. 45. 47. N.

(2.) PETRINIA. See PETRINA, N° 2.

(3.) PETRINIA PUSTA, a town of Croatia, near
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the source of the Petrina, 10 miles S. of PETRINIA, N° 1.

PETRIZZI, a town of Naples, in Calabria Ultra; 5 miles from Squillace.

PETROBRUSSIANS, a religious sect, which had its rise in France and the Netherlands about A.D. 1120. The name is derived from *Peter Bruys*, a Provençal, who attempted to reform the abuses of the church. His followers were numerous; and for 20 years he laboured in the ministry with great zeal. He was, however, burnt in 1130, by an enraged populace set on by the clergy. The chief of Bruys's followers was a monk named Henry; from whom the Petrobrussians were also called HENRICIANS. They held, 1. That children before the age of reason cannot be justified by baptism. 2. That no churches should be built, but that those that already are should be pulled down. 3. That the cross ought to be pulled down and burnt, because we ought to abhor the instruments of our Saviour's passion. 4. That the real body and blood of Christ are not exhibited in the eucharist, but merely represented by their figures and symbols. 5. That sacrifices, alms, prayers, &c. do not avail the dead.

PETROCORI, the ancient inhabitants of that part of Gaul, which was called PERIGORD before the revolution. *Ces. de Bell. Gall.* vii. c. 75

PETROJOANNITES, followers of Peter John, or Peter Joannes, i. e. Peter the son of John, who flourished in the 12th century. His doctrine was not known till after his death, when his body was taken out of his grave and burnt. His opinions were, that he alone had the knowledge of the true sense wherein the apostles preached the gospel; that the reasonable soul is not the form of man; that there is no grace infused by baptism; and that Jesus Christ was pierced with a lance on the cross before he expired.

(1.) * PETROL. } *n. f.* [*petrole*, Fr.] *Pet-*

(1.) * PETROLEUM } *trol* or *petroleum* is a
liquid bitumen, black, floating on the water of
springs. Woodward.

(2.) PETROLIUM, or ROCK OIL; a thick oily substance exuding out of the earth, and collected on the surface of wells in many parts of the world. See CHEMISTRY, Index; and MINERALOGY, Part II, Chap. VI. Gen. III, Sp. 2. It is found in some wells in Italy, and in a deserted mine in the province of Dalarne in Sweden. In this last place it is collected in small hollows of lime-stone, like resin in the pine-tree. It is found trickling from the rocks, or issuing from the earth, in many parts of the late Modenese, and in various parts of France, Switzerland, Germany, and Scotland, as well as in Asia. It is also found mixed with earth and sand, from whence it may be separated by infusion in water. It is of a pungent and acrid taste, and smells like the oil of amber, but more agreeably. It is very light and very pellucid; but, though equally bright and clear under all circumstances, it is liable to a very great variety in its colour. It is naturally almost colourless, and greatly resembles the purest oil of turpentine; this is called *whitish petroleum*, though it is as colourless as water. It is sometimes tinged of brownish, reddish, yellowish, or faint greenish colour; but its most frequent colour is a mixture of reddish
N n and

and blackish, in such a degree that it looks black when viewed behind the light, but purple when placed between the eye and the light. It is rendered thinner by distillation with water, and leaves a refinous residuum; when distilled with a volatile alkali, the latter acquires the properties of fuccinated ammoniac, and contains the acid of amber. It is the most frequent of all the liquid bitumens, and is perhaps the most valuable of them all in medicine. It is to be chosen the purest, lightest, and most pellucid that can be had; of the most penetrating smell and most inflammable. Monnet says that some kinds of it are of the density of nut-oil. It is insoluble in spirit of wine; which, though it be the great dissolvent of sulphur, has no effect upon petroleum, not even with ever so long a digestion. It will not take fire with the dephlegmated acid spirits; and in distillation, either by balneum mariz or in sand, it will neither yield phlegm nor acid spirit; but the oil itself rises in its own form, leaving in the retort only a little matter, thick as honey, and of a brownish colour. The finer kinds resemble NAPHTHA. Mr Bouldoc made several experiments with the white petroleum of Modena; an account of which he gave to the Paris academy. It easily took fire on being brought near a candle, and that without immediately touching the flame; and when heated in any vessel it will attract the flame of a candle, though placed at a great height above the vessel; and the vapour it sends up taking fire, the flame will be communicated to the vessel of heated liquor, and the whole will be consumed. Alonzo Barba, in his book of metals, gives a very melancholy instance of the power of petroleum of taking fire at a distance. A certain well yielding petroleum on the surface of its water, being to be repaired, the workman took down into the well with him a lantern and a candle in it; there were some holes in the lantern, through which the petroleum at a considerable distance sucked out the flame of the candle, and, taking fire, burst up with the noise of a cannon, and tore the man to pieces. It burns in the water; and when mixed with any liquor swims on the surface of it, even of the highest rectified spirit of wine, which is one 7th heavier than pure petroleum. It readily mixes with all the essential oils of vegetables, as oil of lavender, turpentine, &c. and seems very much of their nature. The distinguishing characteristic of the petroleum is its thickness, resembling inspissated oil; when pure it is lighter than spirit of wine; but, though ever so well rectified, it becomes in time thick and black as before. Petroleum when shaken, yields a few bubbles; but they sooner subside than in almost any other liquor, and the liquor resumes its clear state again almost immediately. This seems owing to the air in this fluid being very equally distributed to all its parts, and the liquor being composed of particles very evenly and nicely arranged. The extensibility of the oil is also amazing. A drop of it will spread over several feet of water, and in this condition it gives a great variety of colours; that is, the several parts of which this thin film is composed act as so many prisms. The most severe frost never congeals petroleum into ice; and paper wetted with it becomes transparent as when wetted with oil;

but it does not continue so, the paper becoming opaque again in a few minutes as the oil dries away. There are 3 varieties according to Mongez; 1. The yellow, found at Modena in Italy; very light and volatile. 2. The reddish, or yellowish red; some of which is collected at Gabian in Languedoc and in Alface. 3. The heavy, black, or brown kind, which is the most common, and met with in England, France, Germany, and some other countries. It generally runs out either from chinks or gaps of rocks, or is mixed with the earth, and gushes out of it; or swims on the water of some fountains. According to Dr Lippert, a kind of resin is produced by mixing petroleum with smoking nitrous acid. The taste of this substance is very bitter, but the smell resembles that of musk. The vitriolic acid, according to Lippert, produces a resin still more bitter, but without any aromatic smell. Cronstedt enumerates the following species:

— I. PETROLEUM BARBADENSE, *Makha* or *Barbadoes tar*, a thick substance resembling soft pitch. See MINERALOGY, Part II, Chap. VI, Gen. III, Sp. 3, and 4. It is found in several parts of Europe and Asia; particularly, Sweden, Germany, and Switzerland; on the coast of the Dead Sea in Palestine; in Persia, in the chinks of rocks, and in strata of gypsum and limestone, or floating upon water. It is found also in America, and at Colebrookdale in England. It melts easily and burns with much smoke and foot, leaving either ashes or a slag according to the heterogeneous matter it contains. It contains a portion of the acid of amber. It gives a bitter salt with mineral alkali, more difficult of solution than common salt, and which, when treated with charcoal, does not yield any sulphur.

II. PETROLEUM ELASTICUM, ELASTIC BITUMEN, or MINERAL CAOUTCHOUC. See MINERALOGY, Part II, Chap. VI, Gen. III, Sp. 6.

III. PETROLEUM INDURATUM, *Hardened rock-oil*, or fossil pitch, an inflammable substance dug out of the ground in many parts of the world, and known by the names of *petroleum induratum*, *pix montana*, *indenpech*, *bergboritz*, &c. There are two species. 1. The *asphaltum* or pure fossil pitch, found on the shores of the Dead Sea, and of the Red Sea; also in Sweden, Germany, and France: See ASPHALTUM. It is likewise found in great quantities, in a bituminous lake in the isle of Trinidad. (See TRINIDAD.) It is a smooth, hard, brittle, inodorous substance, of a black or brown colour when looked at; but on holding it up betwixt the eye and the light, appears of a deep red. It swims in water; breaks with a smooth and shining surface; melts easily, and when pure, burns without leaving any ashes; but if impure, leaves ashes, or a slag. M. Monnet asserts that it contains sulphur, or at least the vitriolic acid. It is slightly and partially acted upon by spirit of wine and ether. Brunnich says, the asphaltum comes from Porto Principe in the island of Cuba in the West Indies. It is likewise found, according to Fourcroy, in many parts of China; and is used for a covering to ships by Arabs and Indians. 2. The *pix montana impura* contains a great quantity of earthy matter, which is left in the retort after distillation, or upon the charcoal if burnt in the open

open fire. It coheres like a slag, and is of the colour of black-lead; but in a strong heat, this earth is soon volatilised, so that its nature is not yet well known. During the distillation a liquid substance falls into the receiver, which is found to be of the same nature with rock-oil. The substance itself is found in Sweden and several other countries. The *PISSASPALTUM* is of a mean consistence between the asphaltum and the common petroleum. Mongez says that it is the same with the bitumen collected from a well named *De la Peye*, near Clermont Ferrand in France. The people of mount Ciaro, in Italy, several years ago, discovered an easier way of finding petroleum than that which they formerly had been used to. This mountain abounds with a sort of greyish salt, which lies in large horizontal beds, mingled with strata of clay, and large quantities of a spar of that kind called by the Germans *SELENITES*; which is the common sort, that ferments with acids, and readily dissolves in them, and calcines in a small fire. They pierce these strata in a perpendicular direction till they find water; and the petroleum which had been dispersed among the cracks of those strata is then washed out by the water, and brought from all the neighbouring places to the hole or well which they have dug, on the surface of the water of which it swims after eight or ten days. When there is enough of it got together, they lade it from the top of the water with brass basons; and it is then easily separated from what little water is taken up with it. These wells or holes continue to furnish the oil in different quantities for a considerable time; and when they will yield no more, they pierce the strata in some other place. It is never used among us as a medicine; but the French give it internally in hysteric complaints, and to their children for worms: some also give it from 10 to 15 drops in wine for suppressions of the menses. This, however, is rather the practice of the common people than of the faculty.

PETROMA: See *ELEUSINIA*, and *MYSTERIES*, § 36.

PETROMYZON, the *LAMPREY*, in ichthyology, a genus of fishes belonging to the class of amphibia nantes. It has seven spiracula at the side of the neck, no gills, a fistula on the top of the head, and no breast or belly fins. There are 3 species, distinguished by peculiarities in their back fins.

1. *PETROMYZON BRONCHIALIS*, or *lampern*, is sometimes found of the length of 8 inches, and about the thickness of a swan's quill; but they are generally much smaller. The body is marked with numbers of transverse lines, that pass cross the sides from the back to the bottom of the belly, which is divided from the mouth to the anus by a straight line. The back fin is not angular, but of an equal breadth. The tail is lanceolated, and short at the end. They are frequent in the rivers near Oxford, particularly the Isis; but not peculiar to that county, being found in other English rivers, where, instead of concealing themselves under the stones, they lodge in the mud, and are never observed to adhere to any thing like other lampreys.

2. *PETROMYZON FLUVIATILIS*, the *river or lesser lamprey*, sometimes grows to the length of

10 inches: The mouth is formed like that of the preceding. On the upper part is a large bifurcated tooth; on each side are three rows of very minute ones: on the lower part are 7 teeth, the exterior of which on one side is the largest. The irides are yellow. As in all the other species, between the eyes on the top of the head is a small orifice, of great use to clear its mouth of the water that remains on adhering to the stones; for through that orifice it ejects the water in the same manner as cetaceous fish. On the lower part of the back is a narrow fin, beneath that rises another, which at the beginning is high and angular, then grows narrow, surrounds the tail, and ends near the anus. The colour of the back is brown or dusky, sometimes mixed with blue; the whole under side silvery. These are found in the Thames, Severn, and Dee; are potted with the larger kind, and are by some preferred to it, as being milder tasted. Vast quantities are taken about Mortlake, and sold to the Dutch for bait for their cod fishery. Above 430,000 have been sold in a season at 40s. per 1000; and of late, about 100,000 have been sent to Harwich for the same purpose. It is said that the Dutch have the secret of preserving them till the turbot fishery.

3. *PETROMYZON MARINUS*, the *sea lamprey*, is sometimes found so large as to weigh 4 or 5 lb. It greatly resembles the eel in shape; but its body is larger, and its snout longer, narrower, and sharper, at the termination. The opening of the throat is very wide; each jaw is furnished with a single row of very small teeth; in the middle of the palate are situated one or two other teeth, which are longer, stronger, and moveable towards the inside of the throat; the inferior part of the palate presents moreover a row of very small teeth, which reaches to the bottom of the throat, where are 4 long notched bones; two short fistulous processes are observable at the extremity of the snout, and there are two others thicker, but still shorter, above the eyes. Willoughby supposes that the latter are the organ of hearing, and the former the organ of smell. His opinion with regard to the auditory faculty of this fish is founded on what we read in ancient authors, that the fishermen attracted the lampreys by whistling, and that Crassus had tamed one of them to such a degree that it knew his voice and obeyed his call. The eyes of the lamprey are small, and covered with a transparent light blue membrane; the pupil is bordered with a circle of a colour resembling gold; near the gills, which are 4, there is a round hole on both sides, through which it discharges the water. The lamprey has no fins on his belly or breast; on the back we observe a fin, which begins pretty near the head, extends to the tail which it turns round, and is afterwards continued to the anus: this fin is covered by the skin of the body, to which it adheres but loosely; the skin is smooth, of a red blackish colour, and streaked with yellow, the lamprey advances in the water with winding motions, like those of a serpent, which is common to it, with all the anguilliform fishes. The lamprey lives on fish. During the cold, it lies concealed in the crevices of sea rocks, and consequently is fished for only at certain seasons. It lives in a

state of hostility with the *POULPE*, a kind of sea polypus, which shuns the combat as long as it can; but when it finds the impossibility of escape, it endeavours to surround the lamprey with its long arms. The latter slips away, and the poulpe becomes its prey. The lobster, we are told, avenges the poulpe, and destroys the lamprey in its turn. See *CANCER*, § IV. N^o 6. Rondelet says, that the fishermen consider the bite of the lamprey as venomous and dangerous, and never touch it while alive but with pincers. They beat it on the jaws with a stick, and cut off its head. He adds, that its ashes are a cure for its bite, and for the king's evil. When any one has been bit by a lamprey, the most effectual method is to cut out the part affected. Lampreys are very dexterous in saving themselves; when taken with a hook, they cut the line with their teeth; and when they perceive themselves caught in a net, they attempt to pass through the meshes. They fish for lampreys only on the pebbly edges of sea rocks; some of these pebbles are drawn together to make a pit as far as the water's edge, or a little blood is thrown in, and the lamprey immediately puts forth its head between two rocks. As soon as the hook, which is baited with crab or some other fish, is presented to it, it swallows greedily, and drags it into its hole. There is then occasion for great dexterity to pull it out suddenly; for if it is allowed time to attach itself by the tail, the jaw would be torn away before the fish could be taken. This shows that its strength resides in the end of its tail; for the great bone of this fish is reversed, so that the bones, which in all other fishes are bent towards the tail, are here turned in a contrary direction, and ascend towards the head. After the lamprey is taken out of the water, it is not killed without a great deal of trouble: the best way is to cut the end of its tail, or to crush it with repeated blows on the spine, to prevent it from leaping; as its animal life extends to the end of the spinal marrow. M. De Querhoent denies the supposed poison of the lamprey. This species, he says, abounds on the coasts of Africa, at the Antilles, on the coast of Brazil, at Surinam, and in the East Indies. When taken with a hook, the fisher must kill it before he takes it off, otherwise it darts upon him, and wounds him severely. Its wounds, however, are not venomous, M. de Querhoent having seen several sailors who were bit by it, but experienced no disagreeable consequences. Lampreys are likewise found in great abundance at Ascension Island, but particularly in the seas of Italy: their flesh when dried is excellent; and boiling gives to the vertebrae the colour of griddlein. The flesh of the lamprey is white, fat, soft, and tender; it is pretty agreeable to the taste, and almost as nourishing as that of the eel; those of a large size are greatly superior to the small ones. Mr Pennant is of opinion, that the ancients were unacquainted with this fish.

PETRONA, a town of Croatia; 14 miles N. of Carlsbad.

* *PETRONEL*. *n. f.* [*petrinal*, Fr.] A pistol; a small gun used by a horseman.—

And he with *petronel* upheav'd,

Instead of shield, the blow receiv'd,

The gun recoil'd, as well it might. *Hudibras*.

(1.) *PETRONIUS*, a renowned Roman senator. When governor of Egypt, he permitted Herod, king of the Jews, to purchase in Alexandria a large quantity of corn for the supply of his subjects, who were afflicted with a severe famine. When Tiberius died, Caius Caligula, who succeeded him, took from Vitellius the government of Syria, and gave it to Petronius, who discharged the duties of his office with dignity and honour. From his favouring the Jews, he run the risk of losing the emperor's friendship and his own life; for when that prince gave orders to have his statue deposited in the temple of Jerusalem, Petronius, finding that the Jews would rather suffer death than see that sacred place profaned, was unwilling to have recourse to violent measures; and therefore preferred moderation to cruel measures to enforce obedience. In his voyage to Africa, of which country he had been appointed quaestor, the ship in which he sailed was taken by Scipio, who caused all the soldiers to be put to the sword, and promised to save the quaestor's life, provided he would renounce Cæsar's party. Petronius replied, that "Cæsar's officers were accustomed to grant life to others, and not to receive it;" and, at the same time, he stabbed himself with his own sword.

(2.) *PETRONIUS ARBITER*, Titus, a great critic and polite writer, the favourite of Nero, supposed to be the same mentioned by Tacitus in his *Annals*, lib. xvi. He was proconsul of Bithynia, and afterwards consul, and appeared capable of the greatest employments. He was one of Nero's principal confidants, and the superintendent of his pleasures. The great favour shown him drew upon him the envy of Tigellinus, another of Nero's favourites, who accused him of being concerned in a conspiracy against the emperor: on which Petronius was seized, and was sentenced to die. He met death with a striking indifference, and seems to have tasted it nearly as he had done his pleasures. He would sometimes open a vein, and sometimes close it, conversing with his friends in the meanwhile, not on the immortality of the soul, which was no part of his creed, but on topics which pleased his fancy, as of love-verses, agreeable and passionate airs. Of this disciple of Epicurus, Tacitus gives the following character: "He was," says he, "neither a spendthrift nor a debauchee; but a refined voluptuary, who devoted the day to sleep, and the night to the duties of his office, and to pleasure." He is much distinguished by a satire which he wrote, and secretly conveyed to Nero; in which he ingeniously describes, under borrowed names, the character of this prince. Peter Petit discovered at Traw in Dalmatia, in 1665, a considerable fragment containing the sequel of Petronius's *Trimalcion's Feast*. This fragment, which was printed in 1666 at Padua and Paris, produced a paper war among the learned. While some affirmed that it was the work of Petronius, and others denied it to be so, Petit sent it to Rome. The French critics, who had attacked its authenticity, were silent after it was deposited in the royal

royal library. It is now generally attributed to Petronius. The public did not form the same favourable opinion of some other fragments, which were extracted from a MS. found at Belgrade in 1688, and printed at Paris by Nodot in 1694, though they are ascribed by the editor Charpentier, and other learned men, to Petronius. His genuine works are, 1. A Poem on the civil war between Cæsar and Pompey, translated into prose by Marolles, and into French verse by Boucher, 1737, in 4to. Petronius, disgusted with Lucan's flowery language, opposed a *Pharsalia* to his *Pharsalia*; but his work, though superior to Lucan's in some respects, is not in the true style of epic poetry. 2. A Poem on the Education of the Roman Youth. 3. Two Treatises upon the corruption of Eloquence, and the Decay of Arts and Sciences. 4. A Poem on Dreams. 5. The Shipwreck of Licas. 6. On the Inconstancy of Human Life. And, 7. Trimalcion's Banquet. This last performance is a description of the pleasures of a corrupted court; and the painter is rather an ingenious courtier, than a person whose aim is to reform abuses. The best editions of Petronius are those published at Venice, 1499, in 4to; at Amsterdam, 1669, in 8vo, *cum notis Var. Ibid.* with Boschius's notes, 1677, in 24to; and 1700, 2 vols in 24to. The edition *variorum* was reprinted in 1743, in 2 vols 4to, with Peter Burman's commentaries. (See BURMAN, N° 3.) Petronius died in 65 or 66.

(3.) PETRONIUS GRANIUS, a centurion in the 8th legion, who served with reputation under Cæsar in the Gallic war.

(4.) PETRONIUS MAXIMUS was born A. D. 395, of an illustrious family, being at first a senator and consul of Rome. He put on the imperial purple in 455, after having effected the assassination of Valentinian III. To establish himself upon the throne, he married Eudoxia, the widow of that prince; and, as she was ignorant of his villany, he confessed to her, in a transport of love, that the strong desire he had of being her husband, had made him commit this atrocious crime. Whereupon Eudoxia privately applied to Genesius, king of the Vandals, who coming into Italy with a very powerful army, entered Rome, where the usurper then was. Petronius endeavoured to escape; but the soldiers and people, enraged at his cowardice, fell upon him, and overwhelmed him with a shower of stones. His body was dragged through the streets for 3 days; and, after every other mark of disgrace, thrown into the Tiber, the 12th of June 455. He reigned only 77 days. Yet he had some good qualities. He loved and cultivated the sciences. He was prudent in his councils, circumspect in his actions, equitable in his judgments, a facetious companion, and steady friend. He had gained the affections of every body, while he remained in a private station.

PETROPAULOUSKAIA, two forts of Russia, in Irkutsk, and Upha.

PETROPAULOUSKOI, a sea port town of Russia, in Kamischatka, a government of Irkutsk; 40 miles E. of Ilichin. Lon. 158. 43. E. Lat. 53. N.

PETROPSKOI, a town of Russia, in Perm.

PETROSA ossa, in anatomy, a name given to

the 4th and 5th bones of the cranium, called also *ossa temporum* and *ossa squamosa*; the substance whereof, as their first and last names express, is squamose and very hard.

PETROSELINUM, (*APIUM PETROSELINUM*, Lin.) Parsley. See *APIUM*, N° 2. (II.) This plant is commonly cultivated for culinary purposes. The seeds have an aromatic flavour, and are occasionally used as carminatives, &c. The root is one of the five aperient roots, and with this intention is sometimes made an ingredient in apozems and diet-drinks: if liberally used, it is apt to occasion flatulencies; and thus, by distending the viscera, produces a contrary effect to that intended by it: the taste of this root is somewhat sweetish, with a light degree of warmth and aromatic flavour.

PETROSILEX, in lithology, *CHERT*, or hornstone; a species of stones, found in many mountains. See *MINERALOGY*, Part II, Chap. IV, Class I, Order I, Gen. VI, ii. Sp. 6.

PETROSKOL, a town of Russia, in Perm.

PETROVATZ, a town of Croatia, 20 miles SSE. of Carlsbad.

PETROVSK, two towns of Russia: 1. in Jaroslaf, 52 miles S. of Jaroslaf: 2. in Saratov, 40 miles NW. of Saratov.

(1.) PETROVSKAIA, a sea port town and fort of Russia, on a bay of the sea of Asoph; 24 miles SW. of Mariupol.

(2.) PETROVSKAIA, a bay of Russia, on the N. coast of the Frozen Ocean. Lon. 124. 0. E. Ferro. Lat. 76. 10. N.

PETROWITZ, a town of Bohemia, in Koniggratz; 8 miles ENE. of Koniggratz.

PETROZAVODSK, a town of Russia, in Olovetz; on the W. coast of Onezko lake; 132 miles NE. of Petersburg. Lon. 52. 0. E. Ferro. Lat. 61. 40. N.

PETSCHAKEN, a town of Bohemia, in Bechin; 8 miles S. of Pilgram.

(1.) PETSCHANOI, a town and fort of Russia, in Kolivan; 188 miles WSW. of Kolivan. Lon. 94. 20. E. Ferro. Lat. 53. 0. N.

(2.) PETSCHANOI, a cape on the N. coast of Russia, on the Frozen Sea. Lon. 183. 0. E. Ferro. Lat. 75. 25. N.

PETSCHNECZA, a town of Germany, in Carinthia, 12 miles SW. of Clagenfurt.

PETSKA, a town of Bohemia, in Koniggratz; 11 miles ENE. of Gitschin.

PETTAPOLLY, a town of Hindoostan, in Guntoor; on the coast of Coromandel, and Bay of Bengal; 42 miles SW. of Masulipatam, and 42 NE. of Ongole. Lon. 80. 46. E. Lat. 15. 49. N.

PETTAW. See *PETAW*.

(1.) * PETTCOY. *n. f.* [*gnaphalium minus*.] An herb. *Ainsworth*.

PETTEIA, in the ancient music, a term to which we have no one corresponding in our language. The melopœia, or the art of arranging sounds in succession so as to make melody, is divided into three parts, which the Greeks call *lepsis*, *mixis*, and *chrestis*; the Latins *sumptio*, *mixtio*, and *usus*; and the Italians *presa*, *mescolamento*, and *uso*. The last of these is called by the Greeks *melos*, and by the Italians *pettia*; which therefore means the art of making a just discernment of all the manners

manners of ranging or combining sounds among themselves, so as they may produce their effect, *i. e.* may express the several passions intended to be raised. Thus it shows what sounds are to be used, and what not; how often they are severally to be repeated; with which to begin, and with which to end; whether with a grave sound to rise, or an acute one to fall, &c. The pettea constitutes the manners of the music; chooses out this or that passion, this or that motion of the soul, to be awakened; and determines whether it be proper to excite it on this or that occasion. The pettea, therefore, is in music much what the manners are in poetry. It is not easy to discover whence the denomination should have been taken by the Greeks, unless from *petra*, their game of chess; the musical pettea being a sort of combination and arrangement of sounds, as chess is of pieces called *petra calculi*, or *chess-men*.

PETTENAW, a town of Germany, in the Tirolese, near the Inn; 12 miles WSW. of Inspruck.

PETTEREL, a river of Cumberland, which runs into the Eden, near Carlisle.

* **PETTICOAT**. *n. f.* [*petit* and *coat*.] The lower part of a woman's dress.—Wilt thou make as many holes in an enemy's battle, as thou hast done in a woman's petticoat? *Shakepeare*.—

His feet beneath her petticoat,

Like little mice, stole in and out. *Suckling*.

—It is a great compliment to the sex, that the virtues are generally shewn in petticoats. *Addison*.—

To fifty chosen sylphs, of special note,

We trust th' important charge, the petticoat.

Pope's Rape of the Lock.

* **PETTIFOGGER**. *n. f.* [corrupted from *petivoguer*; *petit* and *voguer*, Fr.] A petty small-rate lawyer.—The worst conditioned and least cliented *pettivoggers* get more plentiful prosecution of actions. *Carew's Survey of Cornwall*.—

Your pettifoggers damn their souls

To share with knaves in cheating fools. *Hudibr.*

—Consider, my dear, how indecent it is to abandon your shop and follow pettifoggers. *Arbutnot*.

—Physicians are apt to despise empirics, lawyers, pettifoggers, merchants, and pedlars. *Swift*.

(1.) **PETTINAIN**, a parish of Scotland, in Lanarkshire, 3 miles long and 2 broad; on the banks of the Clyde, of an irregular rectangular figure. About 1700 acres are arable; and about 1700 hilly, and fit only for pasture. The air is cold. The soil is various; part moorish, part clayey till; and some parts rich loam. Wheat, barley, oats, pease, beans, turnips, flax, and potatoes, are raised. The population, in 1792, was 386; increase 56, since 1755. The number of horses was 134; of sheep, 450; and black cattle, 366. The house of Wester-hall, the family seat of the late Sir James Johnstone, Bart. is in the parish. Thirlages still prevail. There are relics of an ancient camp.

(2.) **PETTINAIN**, a village in the above parish, $\frac{5}{8}$ miles E. of Lanark, and 7 NW. of Biggar, containing 110 inhabitants in 1792.

(3.) **PETTINAIN**, a hill in the above parish.

PETTINCO, a river of Sicily, in the valley of Mazara, which runs into the sea, 6 miles NW. of Misfretta.

* **PETTINESS**. *n. f.* [from *petty*.] Smallness; littleness; inconsiderableness; unimportance.—

The disgrace we have digested;

To answer which, his pettiness would bow under.

Shakep.

* **PETTISH**. *adj.* [from *pet*.] Fretful; peevish. They're froward, pettish, and unus'd to smile.

Creed.

* **PETTISHNESS**. *n. f.* [from *pettish*.] Fretfulness; peevishness.—Like children, when we lose our favourite plaything, we throw away the rest in a fit of pettishness. *Collier*.

* **PETTITOEES**. *n. f.* [*petty* and *toe*.] 1. The feet of a sucking pig. 2. Feet in contempt.—My good clown grew so in love with the wench's song, that he would not stir his pettitoes, till he had both tune and words. *Shak.*

* **PETTO**. *n. f.* [Ital.] The breast; figuratively privacy.

(1.) **PETTY**, Sir William, son of Anthony Petty a clothier, was born at Rumsey, a small sea port town in Hampshire, in 1623; and while a boy took great delight among the artificers there, whose trades he could work at when but 12 years of age. At 15 he was master of the Latin, Greek, and French tongues, and of arithmetic and those parts of practical geometry and astronomy useful to navigation. Soon after he went to Caen, and Paris, where he studied anatomy with Mr Hobbes. Upon his return to England, he was preferred in the king's navy. In 1643, when the war between the king and parliament grew hot, he went into the Netherlands and France for 3 years; and having prosecuted his studies, in physic, at Utrecht, Leyden, Amsterdam, and Paris, he returned home to Rumsey. In 1647, he obtained a patent to teach the art of double writing for 17 years. In 1648, he published at London "Advice to Mr Samuel Hartlib, for the advancement of some particular parts of learning." At this time he adhered to the prevailing party of the kingdom; and went to Oxford, where he taught anatomy and chemistry, and was created M. D. In 1650, he was made professor of anatomy there; and soon after a member of the college of physicians in London, and physician to the army in Ireland; where he continued till 1659, and acquired a great fortune. After the restoration, he was introduced to king Charles II. who knighted him in 1661. In 1662, he published *A Treatise of taxes and contributions*. In 1663, he invented a double-bottomed ship. He died at London of a gangrene in the foot, occasioned by the swelling of the gout, in 1687. The character of his genius is sufficiently seen in his writings, which are very numerous. Amongst these he wrote the history of his own life. He died possessed of a fortune of about 15,000*l.* a year. His family were afterwards ennobled.

(2.) **PETTY**, a parish of Scotland, in Invernesshire, long ago conjoined with the old parish of *Briarlach*, on the S. bank of the Moray Frith, 8 miles long, and 4 broad, in the form of a rectangle. The surface is mostly level, but rises towards the S. the climate is dry; the air serene, and the country in general agreeably diversified with cultivated fields, rivulets, and clumps of trees. The soil is light and sandy. Oats, barley, flax, and potatoes are the usual crops. The population, in 1791, was 1518; the decrease 125 since 1755. The number of horses was 450; of sheep, 2500; and

and black cattle 1400. There are relics of some druidical temples, and of an ancient castle of the earls of Moray, called *Castle Stewart*.

(3.) *PETTY, *adj.* [*petit*, Fr.] Small; inconsiderable; inferior; little.

He had no power;

But was a *petty* servant to the state. *Shak. Cor.*
—In time of infection, some *petty* fellow is sent out to kill the dogs. *Bacon's Nat. Hist.*—Some *petty* alteration or difference it may make. *Bacon*,
Will God incense his ire

For such a *petty* trespass?

Milton.

From thence a thousand lesser poets sprung,
Like *petty* princes from the fall of Rome. *Denb.*
—The sun, moon, and stars, are *petty* gods. *Stillington*.—I have read of *petty* commonwealths, as well as the great ones. *Swift*.

Bolonia water'd by the *petty* Rhine. *Addison*.
—Can an example be given, where we have treated the *pettiest* prince with whom we have had to deal in so contemptuous a manner? *Swift*.

(4.) PETTY BAG, an office in chancery, the three clerks of which record the return of all inquisitions out of every county, and make all patents of comptroliers, gaugers, customers, &c.

(5.) PETTY LARCENY. See LARCENY.

(6.) PETTY MADDER. See CRUCIANELLA.

(7.) PETTY PATEES, among confectioners, a sort of small pies, made of a rich crust filled with sweetmeats.

(8.) PETTY SINGLES, among falconers, the toes of a hawk.

(9.) PETTY TALLY, in the sea language, a competent allowance of victuals, according to the number of the ship's company.

(10.) PETTY TREASON. See TREASON.

(11.) PETTY WHIN, a species of ONONIS.

PETTY-CHAP, in ornithology. See MOTACILLA, N° 6.

PETTYCUR, a harbour of Fifeshire, on the N. bank of the Frith of Forth, opposite Leith, a mile W. of Kinghorn. It is the usual landing-place of the passengers from Leith, and has a good inn. A safe harbour and basin were lately constructed at it, by Capt. Ruyard of the Royal Engineers.

*PETULANCE, *n. f.* [*petulance*, Fr. *petulant*].
*PETULANCY, *s. ia*, [Lat.] Sauciness; peevishness; wantonness.—There was a wall or parapet of teeth set in our mouth, to restrain the *petulancy* of our words. *Ben Jonson*.—Such was others *petulancy*, that they joyed to see their betters shamefully outraged. *King Charles*.—That which looked like pride in some, and like *petulance* in others, would be in time wrought off. *Clarendon*.—Many instances of *petulancy* and scurrility are to be seen in their pamphlets. *Swift*.—There appears in our age a pride and *petulancy* in youth. *Watts's Logic*.

*PETULANT, *adj.* [*petulans*, Lat. *petulant*, Fr.] 1. Saucy; perverse.—Let him shew the force of his argument, without too importunate and *petulant* demands of an answer. *Watts*. 2. Wanton.—The tongue of a man is so *petulant*, that one should not lay too great stress upon any present speeches. *Spektor*.

*PETULANTLY, *adv.* [from *petulant*.] With petulance; with saucy pertness.

PETUNSE, in natural history, one of the two

substances whereof porcelain or china ware is made. The *petunse* is a coarse kind of flint or pebble, the surface of which is not so smooth when broken as that of our common flint. See PORCELAIN.

PETURANO, a town of Naples, in Abruzzo Citra; 4 miles S. of Solmona.

PETWORTH, a large, populous, and handsome town of Suffex, 5 miles from Midhurst and the Suffex Downs, and 49 from London.

PETZEN, a mountain of Carinthia.

PETZENKIRCHEN, a town of Germany, in Austria, 8 miles E. of Ips.

PETZENSTEIN, a town of Franconia, 28 miles SSW. of Bayreuth, and 35 NNE. of Nuremberg.

PEUCEDANUM, or SULPHUR-WORT, a genus of the digynia order, belonging to the pentandria class of plants; and in the natural method ranking under the 45th order, *Umbellatae*. The fruit is lobed, striated on both sides, and surrounded by a membrane; the involucre are very short. There are 3 species, none of which have any remarkable properties, excepting the

PEUCEDANUM OFFICINALE, or common *hog's fennel*, growing naturally in the English salt marshes, rises to the height of 2 feet, with channelled stalks, which divide into 2 or 3 branches, each crowned with an umbel of yellow flowers, composed of several small circular umbels. The roots, when bruised, have a strong fetid scent like sulphur, and an acrid, bitterish, unctuous taste. Wounded in the spring, they yield a considerable quantity of yellow juice, which dries into a gummy resin, and retains the strong smell of the root. The expressed juice was used by the ancients in lethargic disorders.

PEUCER, Gaspar, professor of medicine at Wirtemberg, was born at Bautzen in Lusatia. He married a daughter of Melancthon, whose works he published in 1601, in 5 vols. Being a Protestant, and being closely imprisoned for 10 years for his opinions, he wrote his thoughts on the margins of old books, with ink made of burnt crusts soaked in wine. He died in 1603.

PEUCESTES, a brave general under Alexander the Great, who bestowed on him a crown of gold. See MACEDON, § 14.

PEVENSEY, a town of Suffex, on a river which runs into a bay in the English Channel, and forms *Pevensey Harbour*. It has an ancient castle belonging to Robert Earl of Moreton, thought by antiquarians to be the most entire remain of Roman architecture in Britain. Duke Bertold gave it to the abbey of St Denis in 932. Sueno the Dane landed at it in 1049, carried off his cousin Beorn, and murdered him. It was afterwards ravaged by Earl Godwin and his son Harold, who carried off many ships. And here William the Conqueror landed, previous to his conquest of England. It is circular, and incloses 7 acres. It is 14 miles WSW. of Hastings, and 63 S. of London.

PEVER, a river of Cheshire, which runs into the Wever, near Norwich.

PEVEREL POINT, a cape of Dorsetshire, on the English Channel; 12 miles WSW. of the Needles.

PEUPLINGUE, a town of France, in the dep. of the Straits of Calais; 4½ miles SW. of Calais.

PEUTEMAN, Peter, a Dutch painter, born at Rotterdam

Rotterdam in 1650. His subjects were either allegorical or emblematical allusions to the shortness and misery of human life. He died in consequence of a fright in 1692.

PEUTINGER, Conrad, a learned German, born at Augsburg in 1465. He became secretary to the senate of Augsburg; and published an ancient *Itinerary*, called *Tabula Peutingerina*, marking the roads by which the Roman armies passed to the greater part of the empire. He died in 1574.

* PEW. *n. f.* [*puge*, Dutch.] A feat inclosed in a church.—Sir Thomas More did use, at mass, to sit in the chancel, and his lady in a *pew*. *Bacon*.—Should our sex take it into their heads to wear trunk breeches at church, a man and his wife would fill a whole *pew*. *Addison*.—

She decently, in form, pays heav'n its due,
And makes a civil visit to her *pew*. *Young*.

(1.) * PEWET. *n. f.* [*pieuwit*, Dutch; *vannellus*.]

1. A water fowl.—We reckon the dip-chick, so named of his diving and littleness, puffers, *peewets*, meawes. *Carew*. 2. The lapwing. *Ainsworth*.

(2.) PEWET. See *LARUS*, N° 9.

(3.) PEWET ISLAND, an island in the German Ocean, near the coast of Essex; 5 miles SSW. of Harwich harbour.

PEWSUM, a town of East Friesland, and capital of a bailiwick; 6 miles NNW. of Emden.

(1.) * PEWTER. *n. f.* [*peauter*, Dutch.] 1. A compound of metals; an artificial metal.—Nine parts or more of tin, with one of regulus of antimony, compose *pewter*. *Pemberton*.—Coarse *pewter* is made of fine tin and lead. *Bacon*.—The *pewter*, into which no water could enter, became more white. *Bacon*.—*Pewter* dishes, with water in them, will not melt easily, but without it they will: nay, butter or oil, in themselves inflammable, yet, by their moisture, will hinder melting. *Bacon*. 2. The plates and dishes in a house.—The eye of the mistress was wont to make her *pewter* shine. *Addison*.

(2.) PEWTER is a fictitious metal used in making domestic utensils, as plates, dishes, &c.—The basis of the metal is tin, which is converted into pewter by mixing at the rate of an hundred weight of tin with 15 pounds of lead and six pounds of brass.—Besides this composition, which makes the common pewter, there are other kinds, compounded of tin, antimony, bismuth, and copper, in several proportions.

* PEWTERER. *n. f.* [from *pewter*.] A smith who works in pewter.—He shall charge you and discharge you with the motion of a *pewterer's* hammer. *Shak*.—We caused a skilful *pewterer* to close the vessel in our^d presence with solder exquisitely. *Boyle*.

PEXHALL, a town of Cheshire, W. of Macclesfield.

PEYER, J. Conrad, a learned German physician, born at Schaffhausen. He published *Exercitatio anatomico-medica de Glandulis intestinum*, at Schaffhausen, in 1677.

PEYERBACH, a town of Germany, in Austria; 7 miles W. of Eferding, and 16 W. of Linz.

PEYERSON'S POINT, a cape on the N. coast of Antigua. Lon. 61. 32. W. Lat. 17. 18. N.

PEYRAC, a town of France, in the dep. of the

Lot; 5 miles NW. of Gourdon, and 10 SW. of Martel.

PEYRAT, a town of France, in the dep. of the Upper Vienne; 12 miles ESE. of St Leonard, and 21 E. of Limoges.

PEYREBOURADE, a town of France, in the dep. of the Landes; 10½ miles S. of Dax, and 16½ E. of Bayonne.

PEYREI, a town of France, in the dep. of the Vienne; 15 miles SW. of Poitiers.

PEYRELAU, a town of France, in the dep. of the Aveyron; 9 miles NE. of Milhau.

PEYRERE, Isaac LA, was born at Bourdeaux, of Protestant parents. He entered into the service of the Prince of Conde, who was much pleased with the singularity of his genius. From the perusal of St Paul's writings he took into his head to aver that Adam was not the first of the human race; and, to prove this extravagant opinion, he published, in 1655, a book, printed in Holland in 4to and in 12mo, with this title, *Præadamitæ, five exercitatio super versibus* 12, 13, 14, cap. 15, *Epistola Pauli ad Romanos*. This was burnt at Paris, and the author imprisoned at Brufels. The Prince of Conde having obtained his liberty, he travelled to Rome in 1656, and there gave in to Pope Alexander VII. a solemn renunciation both of Calvinism and Preadamism. His conversion was not thought to be sincere, at least with regard to this last heresy. His desire to be the head of a new sect is evident; and in his book he pays many compliments to the Jews, and invites them to attend his lectures. Upon his return to Paris he went again into the Prince of Conde's service as his librarian. Some time after he retired to the seminary *des Vertus*, where he died Jan. 30th 1676, aged 82. He left behind him, I. A treatise, as singular as it is scarce, entitled, *Du rappel des Juifs*, 1643, in 8vo. The recal of the Israelites, in the opinion of this writer, will be not only of a spiritual nature, but they will be reinstated in the temporal blessings which they enjoyed before their rejection. They will again take possession of the holy land, which will resume its former fertility; and their restorer will be a *king of France*. II. A curious and entertaining account of Greenland, 8vo, 1647. III. An equally interesting account of Iceland, 1663, 8vo. IV. A letter to Philotimus, 1658, in 8vo, in which he explains the reasons of his recantation, &c.

PEYRILLAT, a town of France, in the department of Upper Vienne; 12 miles NW. of Limoges.

PEYRINS, a town of France, in the department of the Drome; 12 miles N. of Romans.

PEYROLLES, a town of France, in the dep. of the Mouths of the Rhone, famed for its mineral waters; 9 miles NE. of Aix.

PEYRONIUS, Francis DE LA, an eminent French surgeon, who practised surgery at Paris with such éclat that he was appointed first surgeon to Lewis XV. He improved this favourable situation, and procured to his profession those establishments which contributed to extend its benefits. The Royal College of Surgery at Paris was founded by his means in 1731, was enlightened by his knowledge, and encouraged by his munificence. At his death, which happened at Versailles,

faillies, 24th April 1747, he bequeathed to the society of surgeons in Paris two thirds of his effects, his estate of Marigni, which was sold to the king for 200,000 livres, and his library. He also left to the society of surgeons at Montpellier two houses, with 100,000 livres, to erect there a chirological amphitheatre. He was a philosopher without ostentation; his understanding was acute, his natural vivacity rendered his conversation agreeable; and he possessed an uncommon degree of sympathy for those in distress.

PEYROUSE. See PEROUSE.

PEYROUX, a town of France, in the department of the Vienne; 9 m. SW. of Isle Jourdain.

PEYRUIS, a town of France, in the dep. of the Upper Alps; $7\frac{1}{2}$ miles SW. of Albin, and 15 SW. of Digne.

PEYRUSSE, a town of France, in the dep. of Aveyron; 6 miles SW. of Albin, and 9 SE. of Figeac.

PEYSTORF, a town of Germany in Austria; 12 miles WSW. of Feldsburg.

PEYU, an island of China, near the coast, in the East Sea. Lon. 138. 6. E. Ferro. Lat. 30. 20. N.

PEZA, a river of Russia, in Archangel, rising from Lake Varzefkoi, and running into Mezen, 12 miles SE. of Osokolkoi.

PEZAY; N. Mañon, marquis of, a native of Paris, was a captain of dragoons; and gave some lessons on tactics to Lewis XVI. He died in the beginning of 1778. He left behind him, 1. A translation of Catullus, 2. *Les Soirées Helvétiques, Alsaciennes, et Franc Comtoises*, in 8vo, 1770. 3. *Les Soirées Provençales*, in MS. 4. *La Rosière de Salency*; a pastoral in three acts, which has been performed with success on the Italian theatres. 5. *Les campagners de Maillebois*, in 3 vols 4to, and a volume of Maps.

(1.) PEZENAS, Esprit, a learned Jesuit, born at Avignon in 1692. He became Professor of Medicine at Marseilles. His works and translations are numerous, and esteemed for their perspicuity.

(2.) PEZENAS. See PESENAS.

PEZILLA, a town of France, in the dep. of the Eastern Pyrenees; 6 miles W. of Perpignan.

PEZIZA, *cup. mushroom*, in botany, a genus of the natural order of fungi, belonging to the cryptogamia class of plants. The fungus campanulated and sessile. Linnæus enumerates 8 species.

PEZOS, a town of Spain, in Asturias.

PEZRON, Paul, a very learned and ingenious Frenchman, born at Hennebon in Brittany, in 1639, and admitted into the order of Cîteaux in 1660. He was a great antiquary, and was author of *The antiquity of Time, restored and defended against the Jews and modern chronologers*. He went through several promotions, the last of which was to the abbey of Charmoye, and died in 1706.

PFAFF, a mountain of Germany in the S. part of Austria, bordering on Stiria.

PFAFFENBERG, a town of lower Bavaria, 14 m. NW. of Dingeltingen, and 16 N. of Landshut.

PFAFFENHAUSEN, 2 towns of Germany; 1, in Lower Bavaria, 13 miles NNW. of Landshut, and 9 SSE. of Abersperg; 2, in Suabia, on the

Mindel, 3 miles N. of Mindelheim, and 21 SW. of Augsburg.

PFAFFENHEIM, a town of France in the dep. of the Upper Rhine, 6 miles S. of Colmar.

(1.) PFAFFENHOFEN, a town of France, in the dep. of the Lower Rhine; 9 miles W. of Haguenau.

(2, 3.) PFAFFENHOFEN, 2 towns of Bavaria; 1, 13 miles SW. of Amberg, and 28 NNW. of Ratibon; 2. On the Ilm, 14 miles SSE. of Ingoldstadt, 19 NW. of Ratibon, and 24 N. of Munich. Lon. 12. 3. E. Lat. 49. 27. N.

PFAFFENHOVEN, a town of Suabia in Wirtemberg; 8 miles W. of Heibronn, and 18 N. of Stuttgart.

PFAFFENSCHLAG, a town of Austria.

PFAFRODA, a town of Upper Saxony, in Erzgebürg; 16 miles S. of Freyberg.

PFALZEL, a town of France, in the department of the Rhine and Moselle, and ci-devant electorate of Treves. It had anciently a palace of the kings of the Franks. It is 3 miles NE. of Treves, and 10 SSE. of Kyllburg.

PFANBERG, a town of Stiria, 10 miles N. of Graz.

PFANNER Tobias, a learned German born at Augsbürg, in 1641. He became secretary of the Archives to the D. of Saxe Gotha. He wrote the *Theology of the Pagans*; with several other works.

PFARCHIRCHEN, a town of Germany in Austria; 5 miles NW. of Putzeinstorf.

PFEEDERSHEIM, a town of France, in the dep. of the Rhine and Moselle, and late Palatinate of the Rhine; 23 miles South of Mentz, and 24 NNW. of Spire.

PFEDELBACH, a town of Franconia, in Hohenlohe; one mile S. of Ohringen.

PFEFFERCORN, John, a learned Jew, who was converted to Christianity. He was the author of *De Abolendis Judæorum scriptis*; and, consistently with the title of that work, endeavoured to persuade the emp. Maximilian to burn all the Hebrew books, except the Bible. He wrote some other tracts also in Latin.

PFEFFERN, a town and abbey, in the Helvetic republic, and late county of Sargans; founded in 720; and in 1196, the abbot was made a prince of the empire. It has some famous baths; and is 4 miles S. of Sargans.

PFEFFIKON, a town of Switzerland, in Zurich; 10 miles E. of Zurich.

PFEFFINGEN, a town of Switzerland, in Basle; 4 miles S. of Basle.

PFEIFFER. See PFIFFER.

(1.) PFETER, a river of Germany, which runs into the Danube, near the town, N° 2.

(2.) PFETER, a town of Lower Bavaria, at the mouth of the above river; 9 miles NW. of Straubing, and 14 E. of Ratibon.

PFEUTERBACH, a river of Suabia, which runs into the Rhine; 5 miles W. of Ettingen, in Baden.

(1.) PFIFFER, or PFEIFFER, Augustus, a learned German, born at Lawenburg. He was 8 years superintendent of the churches in Lubeck, and became professor of oriental languages at Leipzick; where he died in 1698.

(2.) **PIFFER**, Lewis, a brave Swiss general, in the service of France under Charles IX. With 8000 men drawn up in a hollow square, he preserved the life of that monarch, in the famous retreat of *Meaux*, against all the efforts of the Pr. of Conde. But his chief merit lay in his mechanical and topographical exertions. He made a model of Switzerland, the most extraordinary thing of the kind ever executed. (See *MODEL*, § 6.) He was elected *Advoyer*, or chief magistrate of Lucerne, and died in that city and office, in 1594.

PFIN, a town of Switzerland, in the Valais; 12 miles E. of Sion.

PFINZ, a river of Suabia, which rises a mile N. of Wildbad; passes Duriah, and falls into the Rhine, one mile above Germersheim.

PFIRT, or **FORETTE**, a town of France, in the dep. of the Upper Rhine, and ci-devant prov. of Alsace; 10 miles W. of Basle. Lon. 7. 20. E. Lat. 47. 37. N.

PFLAU, a town of Tyrol, 16 m. W. of Bolzano.

PFORING, a town of Upper Bavaria, surrounded with walls, on the Danube; 14 miles E. of Ingolstadt, and 7 W. of Abensperg.

PFORTA, a town of Upper Saxony, in Thuringia, on the Saal; 2 miles SW. of Naumburg.

PFORTEN, a town of Lustatia, 12 miles S. of Guben, and 62 NNE. of Dresden.

PFORTSHEIM, or } a town of Suabia, in the
PFORTZHEIM, } electorate of Baden, with a castle, seated on the Entz, at its conflux with the Nagold and Wurm. In 1689, it was taken and sacked by the French. It is 15 miles SE. of Dourlach, and 20 WNW. of Stutgard. Lon. 9. 46. E. Lat. 48. 57. N.

PFRAMA, a town of Austria, 6 miles SW. of Marneck.

PFREIMB, or } a town of Bavaria, in the Up-
PFREIMBT, } per Palatinate, with a castle, at the confluence of the Pfrent and Nab; 20 miles NE. of Amberg. Lon. 11. 21. E. Lat. 49. 21. N.

PFREINT, a river of Bavaria, which runs into the Nab, at Pfreimb.

PFULINGEN, a town of Suabia, in Wirtemberg; 2 miles S. of Reutlingen, and 20 S. of Stutgard.

PFULLENDORF, an imperial town of Germany, in Suabia, on the Andalspach; 14 miles WSW. of Ravensburg, 18 NNE. of Constance, and 37 SW. of Ulm. Lon. 9. 27. W. Lat. 48. 8. N.

PFUNT, a town of Tirol, 15 m. W. of Bolzano.

PFYN, a town of Switzerland, in Zurich, 7 m. W. of Constance; and 28 NE. of Zurich.

PHACA, in botany, **BASTARD MILK VETCH**, a genus of the diandria order, belonging to the diadelphia class of plants; and in the natural method ranking under the 32d order, *Papilionaceæ*. The legumen is semilocular.

PHACIUM, a town of Thessaly. *Liv.* 32. c. 13.

PHACUSA, a town of Egypt, on the E. mouth of the Nile.

PHÆA, a famous sow which infested the neighbourhood of Cromyon. Theseus destroyed it as he was travelling from Træzene to Athens to make himself known to his father. Some imagine that the boar of Calydon sprang from this sow. According to some authors, Phæa was a woman

who prostituted herself to strangers; whom she murdered, and afterwards plundered.

PHÆACES, the } the people of **PHÆACIA**.
PHÆACIANS, } They first inhabited Hyperia. See **HYPERIA**. They were noted for their indolence and luxury; hence Horace uses *Phæax* for a person indolent and sleek; and hence arose their indolence and pride. *Aristotle*.

PHÆACIA, one of the names of the island Corcyra. See **CORCYRA**, N° 1. This island was famous for producing large quantities of the finest flavoured apples. *Ovid*, *Juvenal*, *Propertius*. Alcinoüs was king of it, who rendered his name famous by his gardens and his hospitality to Ulysses. It is now called *Corfu*. See **ALCINOÛS**; **CORCYRA**, N° 1. and 2.; and **CORFU**.

PHÆCASIA, one of the **SPORADES** Isles.
PHÆDON, a disciple of Socrates, who had been seized by pirates in his youth; and the philosopher, who seemed to discover something uncommon and promising in his countenance, bought his liberty for a sum of money, and ever after esteemed him. Phædon, after Socrates's death, returned to Elis his native country, where he founded a sect of philosophers who composed what was called the *Eliac school*. The name of Phædon is ascribed to one of Plato's dialogues.

PHÆDRA, in fabulous history, a daughter of Minos and Pasiphaë; she married Theseus, by whom she was the mother of Acamas and Demophoon. They had lived for some time in conjugal felicity, when Venus, who hated all the descendants of Apollo, because he had discovered her amours with Mars, inspired Phædra with the strongest passion for Hippolytus the son of Theseus, by the amazon Hippolyte. This passion she long attempted to stifle, but in vain; and, therefore, in the absence of Theseus, she addressed Hippolytus with all the impatience of deponding love. He rejected her with horror and disdain. She, to punish his coldness and refusal, at the return of Theseus, accused Hippolytus of attempts upon her virtue. He, without hearing Hippolytus's defence, banished him from his kingdom, and implored Neptune, who had promised to grant three of his requests, to punish him in an exemplary manner. As Hippolytus fled from Athens, his horses were suddenly terrified by a sea monster, which Neptune had sent on the shore; and he was thus dragged through precipices and over rocks, trampled under the feet of his horses, and crushed under the wheels of his chariot. When his tragical end was known at Athens, Phædra confessed her crime, and hung herself in despair. She was buried at Træzene, where her tomb was still to be seen in the age of Pausanias, near the temple of Venus, which she had built to render the goddess propitious.

PHÆDRIA, a small town of Arcadia. *Paus.*
PHÆDRUNTE. See **OLYMPIA**, N° 1.

(1.) **PHÆDRUS**, an ancient Latin writer, who composed five books of fables, in Iambic verse. He was a Thracian; and his being called *Augustus's freedman* in the title of the book, shows that he had been that emperor's slave. The fables of Phædrus remained buried in libraries, altogether unknown to the public, until the close of the 16th century.

(2.) PHÆDRUS, Thomas, a professor of eloquence at Rome, early in the 16th century. He was canon of Lateran, and keeper of the library in the Vatican. He owed his rise to the acting of Seneca's Hippolytus, in which he performed the part of *Phædra*; whence he got the name of *Phædrus*. He died under the age of 50. Janus Parrhasius gives a list of several works which were almost ready for public view.

PHÆDYMA, the daughter of OTANES, one of the 7 Persian conspirators, who, being married to the false Smerdis, discovered his imposture to her father, by his want of ears, which had been cut off by Cambyfes. See PERSIA, § 7 and 8.

PHÆNARETE, the mother of SOCRATES, the philosopher. She was a mid-wife by profession.

PHÆNIAS, a peripatetic philosopher, a disciple of Aristotle. He wrote a history of Tyrants. *Diog. Laert.*

PHÆNNA, one of the GRACES. *Pauf.* ix. 35.

(1.) * PHENOMENON. *n. f.* See PHENOMENON. This has sometimes *phenomena* in the plural. [*επιφαινόμενον*.] An appearance in the works of nature.—The paper was black, and the colours intense and thick, that the *phenomenon* might be conspicuous. *Newton.*

(2.) PHENOMENON, in philosophy, denotes any remarkable appearance, whether in the heavens or earth, and whether discovered by observation or experiment.

PHAER, Thomas, M. D. an English physician, born in Pembrokehire. He graduated at Oxford in 1539. He published several tracts on diseases and their remedies; and was also celebrated as a poet. He translated 9 books and part of the 10th into English verse: and died in 1560.

PHÆSANA, an ancient town of Arcadia.

PHÆSITUM, in ancient geography: 1. a town of Crete; 2. a town of Macedonia. *Liv.* 36. c. 13.

(I.) PHAETON, in fabulous history, the son of Pæneus and Clymene, one of the Oceanides. Venus became enamoured of him, and entrusted him with the care of one of her temples. This rendered him vain and aspiring; and having obtained from his father the directions of the chariot of the sun for one day, he was unable to guide the fiery steeds; and loosing the reins, Jupiter, to prevent his consuming the heavens and earth, struck him with a thunderbolt, and hurled him from his seat into the river Eridanus or Po. His sisters Phaëtusa, Lampetia, and Phœbe, lamenting his loss upon its banks, were changed by the gods into black poplar trees, and their tears into amber; and Cynus king of Liguria, also grieving at his fate, was transformed into a swan. The poets say, that while Phaeton was driving the chariot of his father, the blood of the Ethiopians was dried up; and their skin became black. The territories of Lybia were also parched up; and ever since, Africa, unable to recover her original verdure and fruitfulness, has exhibited a sandy desert. Some explain this poetical fable thus: Phaeton was a Ligurian prince, who studied astronomy, and in whose age the neighbourhood of the Po was visited with uncommon heats.

(II.) PHAETON. *n. f.* in mechanics, [from the above] a kind of high open carriage for pleasure. *Ash.*

(III.) PHAETON, in ornithology, a genus of birds belonging to the order of anseres, the characters of which are: The bill is sharp, straight and pointed; the nostrils are oblong, and the hinder toe is turned forward. There are two species, *viz.*

1. PHAETON ÆTHEREUS, the tropic bird, is about the size of a partridge, and has very long wings. The bill is red, with an angle under the lower mandible. The eyes are encompassed with black, which ends in a point towards the back of the head. Three or four of the larger quill feathers, towards their ends, are black, tipped with white; all the rest of the bird is white, except the back, which is variegated with curved lines of black. The legs and feet are of a vermilion red. The toes are webbed. The tail consists of two long straight narrow feathers, almost of equal breadth from their quills to their points. See *pl.* 273. "The name *tropic bird* (says Latham), given to this genus, arises from its being chiefly found within the tropic circles; but we are not to conclude, that they never stray voluntarily, or are driven beyond them; for we have met with instances to prove the contrary. There are several varieties: 1. One called by Latham the *white tropic bird*. It is less than the preceding, and is found in as many places. The plumage is in general a silvery white. 2. *The yellow tropic bird* is another variety, the plumage being a yellowish white. These differences, Mr Latham thinks, arise merely from age, if they are not the distinguishing mark of sex. 3. *The black-billed tropic bird* is smaller than any of the former. The bill is black; the plumage on the upper part of the body and wings is striated, partly black and partly white: before the eye there is a large crescent of black, behind it is a streak of the same; the forehead and all the under parts of the body are of a pure white colour; the quills and tail are marked as the upper parts, but the ends of the first are white, and most of the feathers of the last are marked with dusky black at the tips; the sides over the thighs are striated with black and white; the legs are black. 4. *The red-tailed tropic bird* is in length about two feet ten inches, of which the two tail feathers alone measure 1 foot 9 inches. The bill is red; the plumage white, tinged of an elegant pale rose-colour; the crescent over the eyes is somewhat abrupt in the middle; the ends of the scapulars are marked with black. This variety is distinguished by two middle long tail feathers, which are of a beautiful deep red colour, except the shafts and base, which are black; the sides over the thighs are dusky; and the legs are black.

2. PHAETON DEMERSUS, the *red footed penguin*, has a thick, arched, red bill; the head, back-part of the neck, and the back, of a dusky purplish hue, and breast and belly white; brown wings, with the tips of the feathers white; instead of a tail, a few black bristles; and red legs. It is found on Penguin isle, near the Cape of Good Hope, is common all over the South Seas, and is about the size of a goose.

PHÆTONTIADES, the sisters of Phaeton. See PHAETON, N° I.

PHAETUSA. See PHAETON, N° I.

PHÆUS, a town of Peloponnesus.

* PHAGEDENA. *n. f.* [*εχιδνα*]; from *εχyu*, *edō*,

edo, to eat.] An ulcer, where the sharpness of the humour eats away the flesh.

(1.) * PHAGEDENICK. PHAGEDENOUS. *adj.* [*phagedenique*, Fr.] Eating; corroding.—*Phagedenick* medicines, are those which eat away turgous or proud flesh. *Di3.*—A bubo, according to its malignancy, either proves easily curable, or terminates in a *phagedenous* ulcer with jagged lips. *Wijeman.*—When they are very putrid and corrosive, which circumstances give them the name of foul *phagedenick* ulcers, some spirits of wine should be added to the fomentation. *Sharp.*

(2.) PHAGEDENIC MEDICINES, those used to eat off proud or fungous flesh; such as are all the caustics.

(3.) PHAGEDENIC WATER, in chemistry, denotes a water made from quicklime and sublimate; and is very efficacious in the cure of phagedenic ulcers. To prepare this water, put 2 lb. of fresh quicklime in a large earthen pan, and pour upon it about 10 lb. of rain water; let them stand together for two days, stirring them frequently: at last leave the lime to settle well, then pour off the water by inclination, filtrate it, and put it in a glass bottle, adding to it an ounce of corrosive sublimate in powder: which from white becomes yellow, and sinks to the bottom of the vessel. The water being settled, is fit for use in the cleansing of wounds and ulcers, and to eat off superfluous flesh, especially in gangrenes; in which case may be added to it one 3d or 4th part of spirit of wine.

PHAGESIA, an ancient festival among the Greeks; observed during the celebration of the Dionysia; so called from the *φαγνυ*, good eating; that then universally prevailed.

PHALACRINE, an ancient village of the Sabines, where Vespasian was born. *Suet.*

(I.) PHALÆNA, the MOTH, in zoology, a genus of insects belonging to the order lepidopter. The feelers are cataceous, and taper gradually towards the points; the wings are often bent backwards. The caterpillars of this genus vary much as to size, and considerably as to their shape and number of feet. It is remarkable, that caterpillars of almost every species of this genus are found with 10, 12, 14, and 16 feet. The last are the most common and the largest. (See N° iv.) "All the caterpillars of phalænz," (says Barbut), after having several times cast their slough, spin their cod, in which they are transformed to chrysalids. But the texture of the cod, the fineness of the thread of which it is composed, and the different matters joined to the threads, are infinitely various. The chrysalids of phalænz are generally oblong ovals, not angulous as those of butterflies, nor so soon transformed to perfect insects. They remain a much longer time within the cod, the greatest part not coming forth till the ensuing year. Some I have met with that remained in that state during two or three years successively. Heat or cold contribute greatly to forward or put back their final metamorphoses; a fact which may be ascertained by procuring them a certain degree of moderate heat, by which means one may see phalænz brought forth upon a mantle-piece in the depth of winter. The phalænz or perfect insects sprung from those cods, are generally more

clumsy and heavy than butterflies; their colours are likewise more brown, dim, and obscure, though there are some phalænz whose colours are very lively and brilliant. Several of them fly only in the evening, keeping quiet and close under leaves in the day-time, and this has induced some authors to give them the name of *night butterflies*. In summer evenings they find their way into rooms, attracted by the lights round which they are seen to hover. And indeed a sure method of catching a great number of phalænz is to hunt them by night in a bower with a lantern. They all resort to the light of the lantern, about which great numbers of them may be caught. A remarkable circumstance has been observed of these phalænz, which is, that the females of some of them are without wings. By their looks they never would be taken for phalænz. They have the appearance of a large, short, six-legged, creeping animal, while their male is winged and active. Yet this heavy creature is a real phalæna, easily distinguished by its antennæ. It even has wings, but so short that they are no more than small protuberances placed at the extremity of the thorax, and that appear quite useless. Those phalænz whose females are destitute of wings are generally in the number of those whose antennæ are pectinated. The unwinged females have antennæ similar to those of the males, but with shorter beards only. Their body is also charged with scales the characteristic of insects of this order."

(II.) PHALÆNÆ, FAMILIES OF. M. Barbut divides this extensive genus into 8 families; viz.

i. PHALÆNÆ ALUCITÆ. The wings are split, or divided into branches almost to their base.

ii. PHALÆNÆ ATTACÆ, whose wings incline downwards and are spread open: they have pectinated antennæ without a tongue, or pectinated antennæ with a spiral tongue, or cataceous antennæ with a spiral tongue.

iii. PHALÆNÆ BOMBYCÆ, whose wings cover the body in a position nearly horizontal, and which have pectinated antennæ. They are either *clinques*, which want the tongue, or have it so short as not to be manifestly spiral; their wings are either reversed or deflected; or *spirilingues*, which have a spiral tongue; and are either *leaves* with smooth backs, or *cristatæ dorso* with a kind of crest or tuft of hair on the back.

iv. PHALÆNÆ GEOMETRÆ, whose wings when at rest are extended horizontally: the antennæ in one subdivision of this section are pectinated, in another cataceous; the under wings in each of these divisions are either angulated, or round with entire edges. "Amongst the geometræ caterpillars (says Barbut) there are some very singular, whether for their colour, or the tubercula which they bear, or lastly for the difference of their attitudes. Many resemble small branches or bits of dry wood; and that resemblance may be a means of saving many of those insects from the voraciousness of birds, who do not so easily discern them. Other caterpillars are very hairy, while several are quite smooth; the latter have a cleaner look, whereas the hairy ones have something hideous, and may even be hurtful when touched." They have 10 or 12 feet.

v. PHALÆNÆ

v. *PHALÆNA NOCTUÆ*, whose wings are incumbent as in the bombyces, from which they differ chiefly in the formation of the antennæ, which are cæteaceous. They are either *elingues*, wanting tongues, or *spirilingues*, having spiral tongues.

vi. *PHALÆNA PYRALIDES*. The inner margins of the wings in this section are laid over the other; the wings themselves decline a little towards the sides of the body, and in shape resemble a delta; they have considerable palpi of different forms.

vii. *PHALÆNA TINCÆ*. The wings are wrapped up or folded round the body, so as to give the insect a cylindrical form; the forehead is stretched out or advanced forwards.

viii. *PHALÆNA TORTRICES*. The wings are exceeding obtuse, their exterior margin is curve, and declines towards the sides of the body. They have short palpi.

(III.) *PHALÆNÆ*, SPECIES OF. There are no fewer than 460 species. To describe them all would be impossible; but we shall mention a few.

1. *PHALÆNA ALUCITA PENTADACTYLA*, (Nº 1. *Plate 273*.) The eyes of this species are black; the body is of a pale yellow. The wings are snow white, and the insect keeps them stretched asunder when at rest. The superior are divided in two, or rather appear composed of two stumps of bird's feathers united at the base. The inferior ones are likewise divided into three threads or bristles, which are furnished on both sides with fine fringes. The caterpillar is of a green colour, dotted with black, and charged with a few hairs. It feeds upon grass, changes to a chrysalis about September, and appears a moth in August, frequenting woods.

2. *PHALÆNA ATTACA PAVONIA MINOR*. (See Nº 2.) The wings of this insect, says Barbut, are brown, undulated, and variegated, having some grey in the middle, and a margin one line broad; in its colour yellowish grey. The under part has more of the grey cast, but the extremities of the wings before the margin have a broad band of brown. The 4 wings both above and beneath, have each a large eye, which eyes are black, encompassed with a dun-coloured circle, and above that with a semicircle of white, then another of red, and lastly the eye is terminated by a whole circle of black. Across the middle of the eye is drawn transversely a small whitish line. The caterpillar is green, has 16 feet with rose-colour tubercula, charged with long hairs terminated by a small knob; besides which, it has dun-colour or reddish rings. It is found upon fruit-trees.

3. *PHALÆNA NOCTUA ELINGUIS HUMILI*, Nº 3. In this species the wings of the male are of a snowy white; of the female yellowish, with streaks of a deeper hue; the shoulders, abdomen, &c. in both sexes, are deep yellow. The antennæ are pectinated and shorter than the thorax. The caterpillar feeds upon the roots of burdock, hops, &c. changes into a chrysalis in May, appears in the winged state in June, frequenting low marshy grounds where hops grow.

4. *PHALÆNA NOCTUA PRONUBA SEIRILINGUIS*, Nº 4. The thorax, head, antennæ, feet,

and upper wings, are of a brown colour, more or less dark, sometimes so deep as to be nearly black, but often of a bluish cast. The upper wings are moreover somewhat clouded, and have two black spots on the middle, the other towards the outward angle of the lower part of the wing. The under ones are of a beautiful orange colour, with a broad black band near the lower edge of the wing, of which it follows the direction. The caterpillar is smooth; to be found on several plants, but particularly upon the thlaspi and some other cruciferous plants. It keeps in concealment during the day, and only feeds by night. Its metamorphosis is performed under ground, and some varieties of colour are observable amongst these caterpillars; some being green, others brown; which latter yield males, the former females.

5. *PHALÆNA TORTRIX PRASINANA*. The superior wings of this species are of a fine green colour, having two diagonal yellow bars on each, the body and inferior wings are whitish, shaded with yellowish green. The caterpillar is a pale yellowish green, ornamented with small brown specks or spots, the tail being forked and tipped with orange red colour; it feeds on the oak, changes to a chrysalis in September, and assumes the fly state about May, frequenting woods.

PHALÆSIA, a town of Arcadia. *Pauf.* 3.

PHALANGIUM, in zoology, a genus of insects belonging to the order of aptera. They have 8 feet, two eyes on the top of the head placed very near each other, and other two on the sides of the head: the feelers resemble legs, and the belly is round. There are 9 species: Mr Barbut describes only one species, viz.

PHALANGIUM OPILIS of LINNÆUS. "Its body is roundish, of a dusky brown on the back, with a dusker spot of a rhomboidal figure near the middle of it. The belly is whitish; the legs are extremely long and slender. On the back part of the head there stands a little eminence, which has on it a kind of double crest, formed as it were of a number of minute spines; the eyes are small and black, and are two in number. It is commonly called the *shepherd spider*. This species of spider multiplies singularly. They are great spinners. In autumn the stubble is quite covered with the threads of these spiders, by means of which they travel with ease, and ensnare their prey. However, those threads are thought rather to be the produce of a species of tick called *autumnal weaver*. A small degree of attention discovers an amazing multitude of those ticks almost imperceptible, and that is their work. The threads, when united, appear of a beautiful white, wave about in the air, and are known in the country by the name of *virgin's threads*. Some naturalists think, that those threads, floating in the air, serve the insect as sails to waft it through the air, and as a net to entrap insects on the wing; for remnants of prey, say they, are discoverable in them. As to those parcels in which nothing is seen, they are only essays rejected by those travelling insects. The analogy between the phalangium and the crab, and the facility with which it parts with its legs to save the rest of the body, has raised a presumption that its legs might grow again as do those of the crabs and lobsters.

PHALANGOSIS,

PHALANGOSIS, in surgery, a tumor and relaxation of the eye-lids, often so great as to deform the eye, and considerably to impede vision. Sometimes the eye-lid when in this state subsides or sinks down, occasioned perhaps either by a palsy of the muscle which sustains and elevates the eye-lid, or else from a relaxation of the cutis above, from various causes. Sometimes an oedematous or aqueous tumour is formed on the eye-lids, so as almost entirely to exclude vision; but this last case should be distinguished from the other, and may be easily remedied by the use of internal and topical medicines, such as purges and diuretics given inwardly, and a compress dipped in warm spirit of wine and lime water. But in the paralytic or relaxed case, the use of cordial and nervous medicines must be proposed internally; and outwardly, balsam of Peru and Hungary water are to be employed. If all these fail, the remaining method of cure is to extirpate a sufficient quantity of the relaxed cutis; and then, after healing up the wound, the remainder will be sufficiently shortened.

PHALANNA, a town of Thessaly. *Liv.* 42. c. 54.

(1.) **PHALANTHUS**, a Spartan, the son of Aracus, and leader of the **PARTHENII**, who founded **TARENTUM**, in Italy. He was shipwrecked on the coast, but was carried ashore by a dolphin.

(2, 3.) **PHALANTHUS**, a town and mountain of Arcadia. *Pauf.* viii. 35.

(1.) * **PHALANX**. *n. f.* [*phalanx*, Latin, *phalange*, Fr.] A troop of men closely embodied.—

Far otherwife th' inviolable fairs,

In cubic *phalanx* firm, advanc'd entire. *Milton.*

The Grecian *phalanx*, moveless as a tow'r,

On all sides batter'd, yet resists his pow'r.

Pope.

(2.) **PHALANX**, in Grecian antiquity, a square battalion of soldiers, with their shields joined, and pikes crossing each other; so that it was next to impossible to break it. The Macedonian phalanx is supposed by some to have had the advantage, in valour and strength, over the Roman legion. It consisted of 16,000 men, of whom 1000 marched abreast, and thus was 16 men deep, each of whom carried a kind of pike 23 feet long. The soldiers stood so close, that the pikes of the 5th rank reached their points beyond the front of the battle. The hindmost ranks leaned their pikes on the shoulders of those who went before them, and, locking them fast, pressed briskly against them when they made the charge; so that the first five ranks had the impetus of the whole phalanx, which was the reason why the shock was generally irresistible. But the word *phalanx* was also used for a party of 28, and several other numbers; and even sometimes for the whole body of foot. See **LEGION**.

(3.) **PHALANX** is applied, by anatomists, to the three rows of small bones which form the fingers.

(4.) **PHALANX**, in natural history, is a term which Dr Woodward and some other writers of fossils have used to express an arrangement of the columns of that sort of fossil coralloid body found frequently in Wales, and called *lithostrotion*.

In the great variety of specimens we find of this, some have the whole phalanx of columns cracked through, and others only a few of the external ones; but these cracks never remain empty, but are found filled up with a white spar, as the smaller cracks of stone usually are. This is not wonderful, as there is much spar in the composition of this fossil; and it is easily washed out of the general mass to fill up these cracks, and is then always found pure, and therefore of its natural colour, white. The **LITHOSTROTION**, or general congeries of these phalanges of columns, is commonly found immersed in a grey stone, and found on the tops of the rocky cliffs about Milford in Wales. It is usually erect, though somewhat inclining in some specimens, but never lies horizontal. It seems to have been all white at first, but to have been since gradually tintured with the matter of the stone in which it lies. The single columns, which form each phalanx, are usually round or cylindric, though sometimes flatted and bent; some of them are also naturally of an angular figure; these, however, are not regular in the number of their angles, some consisting of 3 sides, some of 5, and some of 7; some are hexangular also, but these are scarce. They are from 5 or 6 to 16 inches in length; and the largest are near half an inch over, the least about a quarter of an inch; the greater number are very equal to one another in size; but the sides of the columns being unequal, the same column measures of a different thickness when measured different ways; the phalanges or congeries of these are sometimes of a foot or more in diameter. The columns are often burst, as if they had been affected by external injuries; and it is evident that they were not formed before several other of the extraneous fossils; for there are found sometimes shells of sea fishes and entrochi immersed and bedded in the bodies of the columns. It appears plainly from hence, that when these bodies were washed out of the sea, and tossed about in the waters which then covered the tops of these cliffs, this elegant fossil, together with the stony bed in which it is contained, were so soft that those other bodies found entrance into their very substance, and they were formed as it were upon them. This fossil takes an elegant polish, and makes in that state a very beautiful appearance, being of the hardness of the common white marble, and carrying the elegant structure visible in the smallest lineaments.

(1.) **PHALARIS**, a remarkable tyrant, born at Crete, where his ambitious designs occasioned his banishment: he took refuge in Agrigentum, a free city of Sicily, and there obtained the supreme power by stratagem. What has chiefly contributed to preserve his name is his cruelty; in one act of which, however, he acted with strict justice. Perillus, a brass-founder at Athens, knowing his disposition, invented a new mode of torture. He made a brazen bull, hollow within, bigger than the life, with a door in the side to admit the victims; who being shut up in it, a fire was kindled under it, to roast them to death; and the throat was so contrived, that their dying groans resembled the roaring of a bull. The artists brought it

it to the tyrant, in hopes of a great reward. Phalaris admired the invention, but ordered the inventor to be put into it, to make the first trial. The end of this detestable tyrant is differently related; but it is very generally believed, with Cicero, that he fell by the hands of the Agrigentines; and, as some suppose, at the instigation of Pythagoras. Ovid tells us, that his tongue was cut out; and that he was then put into the brazen bull. He reigned, Eusebius says, 28 years. See BENTLEY, § 1, 1.

(II.) PHALARIS, CANARY GRASS, in botany, a genus of the trigynia order, belonging to the triandria class of plants. The calyx is bivalved, carinated, and equal in length, containing the corolla. There are ten species, of which the most remarkable are,

1. PHALARIS ARUNDINACEA, the reed Canary Grass; and

2. PHALARIS CANARIENSIS, the manured Canary Grass. These are both natives of Britain. The first grows by the road sides; and is frequently cultivated for the sake of the seeds, which are found to be the best food for the Canary and other small birds. The second grows on the banks of rivers. It is used for thatching ricks or cottages, and endures much longer than straw. In Scandinavia they mow it twice a-year, and their cattle eat it. There is a variety of this cultivated in our gardens with beautifully striped leaves. The stripes are generally green and white; but sometimes they have a purplish cast. This is commonly called painted lady-grass, or ladies tresses.

PHALARIUM, a citadel of Syracuse, where Phalaris's bull was kept.

PHALARUS, a river of Bœotia, running into the Cephissus. *Paus.* ix. 34.

PHALEG. See PELEG.

PHALEMPIN, a town of France, in the dep. of the North; 9 miles SW. of Lille.

PHALERÆ, among the ancient Romans, were military rewards bestowed for some signal act of bravery. Authors do not agree whether the Phaleræ were a suit of rich trappings for a horse, or golden chains something like the torques, but so formed as to hang down to the breast and display a greater profusion of ornament. The last opinion prevails, but perhaps both are true.

PHALEREUS, a village and port of Athens; this last is neither large nor commodious, for which reason Themistocles put the Athenians on building the Piræus; both joined to Athens by long walls. (*Nepos.*) The Phalerus lay nearer the city. (*Pausanias.*) Demetrius Phalerus was of this place. See DEMETRIUS, N° 7.

PHALERIA, a town of Thessaly. *Liv.* 32.

PHALERON, } names given the Phalerus
PHALERUM, } Portus of Athens. See PHALEREUS.

PHALEUCIAN VERSE, in ancient poetry, a kind of verse consisting of five feet; the first of which is a spondee, the second a dactyl, and the three last trochees.

PHALEUCUS, a Roman poet, who invented the phaleucian verse.

PHALLICA, festivals observed by the Egyptians in honour of Osiris. The name is derived

from φαλλος, *simulacrum lignæum membri virilis.* See PHALLUS, N° II.

PHALLOPHORI, persons who carried the *phallus* at the end of a long pole, at the festivals of the PHALLICA. (See last article, MYSTERIES, § 28; and PHALLUS, N° II.) They appeared among the Greeks, befriended with the dregs of wine, covered with the skins of lambs, and wearing a crown of ivy.

(I.) PHALLUS, the MOREL, in botany, a genus of the order of fungi, belonging to the cryptogamia class of plants. The fungus is reticulated above, and smooth below. There are two species.

1. PHALLUS ESCULENTUS, the esculent morel, is a native of Britain, growing in woods, groves, meadows, pastures, &c. The substance, when recent, is wax-like and friable; the colour a whitish yellow, turning brownish in decay; the height of the whole fungus, about four or five inches. The stalk is thick and clumsy, somewhat tuberous at the base, and hollow in the middle. The pileus is either round or conical; at a medium, about the size of an egg, often much larger; hollow within; its base united to the stalk; and its surface cellular, or latticed with irregular sinuses. The magnified seeds are oval. It is much esteemed at table both recent and dried, being commonly used as an ingredient to heighten the flavour of ragouts. We are informed by Gleditsch, that morels are observed to grow in the woods of Germany in the greatest plenty in those places where charcoal has been made. Hence the good women who collect them to sell, receiving a hint how to encourage their growth, have been accustomed to make fires in certain places of the woods, with heath, broom, vaccinium, and other materials, in order to obtain a more plentiful crop. This strange method of cultivating morels being however sometimes attended with dreadful consequences, large woods having been set on fire and destroyed by it, the magistrate thought fit to interpose his authority, and the practice is now interdicted.

2. PHALLUS IMPUDICUS, stinking morel, or stinkhorn, is also a native of Britain, and found in woods and on banks. It arises from the earth under a veil or volva, shaped exactly like a hen's egg, and of the same colour, having a long fibrous radicle at its base. This egg-like volva is composed of two coats or membranes, the space between which is full of a thick, viscid, transparent matter, which, when dry, glues the coats together, and shines like varnish. In the next stage of growth, the volva suddenly bursts into several lacerated permanent segments, from the centre of which arises an erect, white, cellular, hollow stalk, about 5 or 6 inches high, and one thick, of a wax-like friable substance, and most fetid calaverous smell, conical at each end, the base inserted in a white, concave, membranaceous turbinated cup, and the summit capped with a hollow, conical pileus, an inch long, having a reticulated cellular surface, its base detached from the stalk, and its summit umbilicated, the umbilicus sometimes perforated, and sometimes closed. The under side of this pileus is covered with

a clear, viscid, gelatinous matter, similar to that found between the membranes of the volva; and under this viscid matter, concealed in reticulated receptacles, are found the seeds, which when magnified appear spherical. As soon as the volva bursts, the plant begins to diffuse its intolerable odours, which are so powerful and widely expanded, that the fungus may be readily discovered by the scent only, before it appears to the sight. At this time, the viscid matter between the coats of the volva grows turbid and fuscous; and when the plant attains its full maturity, the clear viscid substance in the pileus becomes gradually discoloured, putrid, and extremely fetid, and soon afterwards turns blackish, and, together with the seeds and internal part of the pileus itself, melts away. The fetid smell then begins to remit, the fungus fades, and continues for a short time sapless and coriaceous, and at last becomes the food of worms. The cadaverous scent of this fungus greatly allures the flies; which, lighting upon the pileus, are entrapped in the viscid matter, and perish. We are informed by Gleditsch, that the people in Thuringia call the unopened volva by the ridiculous name of *ghosts* and *demon's eggs*; and that they collect and dry them either in the smoke or open air, and when reduced to powder, use them in a glass of spirits as an aphrodisiac.

(II.) **PHALLUS**, among the Egyptians, was the emblem of fecundity. It was very fervently worshipped by women, especially by those who were barren. This custom was introduced among the Greeks, and festivals in honour of it were called **PHALLICA**, or *phalica*. See MYSTERIES, § 20—27. Among the Hindoos a similar emblem called *lingam* is used, and for similar purposes. See HINDOOS.

PHALSBURG, a town of France, in the dep. of the Meurthe, fortified by Vauban; $4\frac{1}{2}$ miles ENE. of Sarreburg, and $4\frac{1}{2}$ W. of Saverin.

PHALTI, or } son of Laish. He married **PHALTIEL**, } chal, after Saul had taken her from David; but David afterwards took her away from Phalti. (1 Sam. xxv. 44. 2. Sam. iii. 15.) It appears from 2 Sam. xxi. 8. that Michal had children by Phalti, as it is certain she had none by David. See 2 Sam. vi. 23.

PHANÆUS, a promontory of Chios, famous for its wines. *Liv.* 36. c. 43.

PHANAGARA, a town of Russia, in Caucasus, at the mouth of the Kuban, in the Black Sea; 60 miles E. of Theodosia.

PHANAGORIA, a beautiful little island of Asia, on the E. side of the Strait of Casta, between the Black Sea and the Sea of Afoph.

PHANARÆA, a town of Cappadocia. *Strab.*

PHANATIC. *n. f.* or **FANATIC**, a visionary; one who fancies he sees spectres, spirits, apparitions, or other imaginary objects, even when awake; and takes them to be real. See **PHANTASY** and **FANATIC**. Such are phrenetics, necromancers, hypochondriac persons, lycanthropi, &c. See **PHRENETIC**, **HYPOCHONDRIAC**, **LYCANTHROPI**. Hence the word is also applied to enthusiasts, pretenders to revelation, new lights, prophecies, &c. See **ENTHUSIAST**, and **SECOND SIGHT**.

PHANES, a native of Halicarnassus, who was commander of the Grecian auxiliaries, sent to assist Amasis, K. of Egypt, whom he deserted. See *EGYPT*, § 10, 11.

PHANETA, a town of Epirus. *Liv.* xxxii. c. 28.

PHANOCLES, an ancient elegiac poet of Greece, who wrote a poem upon an unnatural crime, wherein he supposes that Orpheus was the first who practised it. Some fragments of his poems are extant.

PHANODEMUS, an ancient Grecian historian, who wrote on the antiquities of Attica.

PHANTASIA, the daughter of Nicarchus of Memphis, in Egypt. It has been said that she wrote a poem on the Trojan war, and another on the return of Ulysses to Ithaca, from which compositions Homer copied the greatest part of his *Iliad* and *Odyssey*, when he visited Memphis, where they were deposited.

(1.) * **PHANTASM**. **PHANTASMA**. *n. f.* [*φαντασμα, phantasma; phantasmè, phantasie, Fr.*] Vain and airy appearance; something appearing only to imagination.—

Like a *phantasma*, or a hideous dream. *Shak.*

This armado is a Spaniard that keeps here in court

A *phantasm*, a monarcho.

Shak.

—They believe, and they believe amiss, because they be but *phantasms* or apparitions. *Raleigh*.—If the great ones were in forwardness, the people were in fury, entertaining this airy body or *phantasm* with incredible affection. *Bacon*.—

In this infernal vale first met; thou call'st

Me father, and that *phantasm* call'st my son.

Milton.

Assaying, by his devilish art, to reach
The organs of her fancy, and with them force
Illusions, as he last, *phantasms* and dreams.

Milton.

(2.) **PHANTASM** is also sometimes used in a synonymous sense with *idea*, or *notion* retained in the mind, of an external object.

* **PHANTASTICAL**. } See **FANTASTICAL**.

* **PHANTASTICK**. }

(2.) **PHANTASTICK IDEAS**. See **METAPHYSICS**. *Part I. Scē. XXV.*

PHANTASY. *n. f.* or **FANCY**, the **IMAGINATION**; the second of the powers or faculties of soul, by which the species of objects received by the external organs of sense are retained, recalled, further examined, and either compounded or divided. See **IMAGINATION**, and **METAPHYSICS**, *Part I. Scē. IX, X, and XXV*. Others define the *phantasy* to be that internal sense or power, whereby the ideas of absent things are formed, and represented to the mind as if they were present. In melancholics and madmen, this faculty is very strong, representing many extravagant and monstrous things, and framing its images as lively as those of sensation; whence the visions and deceptions those persons are liable to.

* **PHANTOM**. *n. f.* [*phantome, French.*] 1. A spectre; an apparition.—What this airy *phantom* said is not absolutely to be relied on. *Atterbury*.—

A constant vapour o'er the palace flies;
Strange *phantoms* rising as the mists arise. *Pope*.

2.

e. A fancied vision.—To try every overture of present happiness, he hunts a phantom he can never overtake. *Rogers*.—

To calm the queen, the phantom sifter flies.
Pope.

PHANUEL, of the tribe of Asher, the father of the prophets Anna. See ANNA, N° 1. and Luke ii. 36—38.

PHAON, in fabulous history, a young man of Mytilene, in the island of Lesbos, who received from Venus an alabaster vase filled with an essence which had the virtue of conferring beauty. He had no sooner anointed his body with it than he became the most beautiful of men. The ladies of Mytilene fell desperately in love with him; and the celebrated Sappho threw herself down a precipice, because he would not encourage her passion. He is said to have been killed by a husband who surprised him with his wife. Ovid, in his *Epistles*, gives a letter from Sappho to Phaon, which Mr Pope has translated into English verse.

(1.) PHARA, in ancient geography, a village between Egypt and Arabia Petrea; or, according to Ptolemy, at a promontory situated between the Sinus Heroopolites and Elaniticus of the Red Sea; where Ismael is said to have dwelt. In Hebrew it is *PARAN*, and in most interpreters; PHARAN in the Septuagint and Vulgate.

(2.) PHARA. See PHARÆ.

PHARACYDES, a commander of the Spartan fleet, who assisted Dionysius, tyrant of Syracuse, against the Carthaginians. *Polyen*. 2.

PHARÆ, in ancient geography, 3 towns, viz. 1. a town of Achaia, in Peloponnesus, on the Pierus, 70 stadia from the sea, and 150 S. of Patre. 2. In Crete (*Pliny*), a colony from the *Pharæ* of Messenia. (*Stephanus*.) 3. *Pharæ*, or *Pheræ* (*Strabo*, *Ptolemy*), or PHARA (*Polybius*), a town of Messenia, on the Nedo (*Strabo*), on the N. side of the Sinus Messenius, and NW. of Abœa; anciently read PHARIS in Homer (*Pausanias*, *Statius*), though now read PHARÆ.

PHARAMOND, the first king of France. He is said to have reigned at Treves, and over a part of France, about A. D. 420, and to have been succeeded by his son Clodio. See FRANCE, § 4. and 5. The institution of the famous *Salique* law is generally attributed to him.

(1.) PHARAN, or PARAN, the name of the wilderness in the neighbourhood of PHARA, adjoining to Kadesht.

(2.) PHARAN, a town of Arabia Petrea, on the Gulf of Suex, formerly a bishop's see, but now much decayed; 40 miles N. of Tor.

(3.) PHARAN. See PHARA.

PHARANITÆ, the natives of PHARÆ. *Ptol*.

PHARAOH, [פַּרְוֹ, *Heb.* i. e. making bare,] a common name of the kings of Egypt. Josephus says, that in the Egyptian language the word *Pharaoh* signifies a king; and that those princes did not assume this name till they ascended the throne, when they quitted also their former name. There are ten monarchs of this name mentioned in Scripture, viz.

1. PHARAOH, in whose time Abraham went down to Egypt, when Sarah, who passed only for Abraham's sister, was, by the command of Pharaoh, brought to his palace to become his wife. See ABRAHAM and SARAH.

2. PHARAOH, who reigned when Joseph arrived in Egypt. See JOSEPH and JACOB.

3. PHARAOH, who persecuted the Israelites, and published a decree that all the male children born of Hebrew women should be thrown into the Nile.

4. PHARAOH, before whom Moses performed many miracles, and in whose sight Egypt was visited with ten dreadful plagues. (*Exod.* vii—x.) This Pharaoh having at last been compelled to send away the Hebrews, and to suffer them to go out of Egypt, repented of the leave he had given, and pursued them at the head of his army with his chariots. But he was drowned in the Red Sea, wherein he had rashly entered in the eagerness of his pursuit. (*Exod.* xiv.) Some historians give us the name of this Pharaoh: Apion calls him AMASIS; Eusebius calls him *Chencris*; Uther calls him *Amenophis*.

5. PHARAOH, who gave protection to Hadad, son of the king of Edom, who gave him to wife the sister of his own queen, enriched him with lands, and brought up his son Genubah in his own court. 1 Kings xi. 17—22.

6. PHARAOH, who gave his daughter in marriage to Solomon (1 Kings iii. 1.): having taken Gezer, set it on fire, drove the Canaanites out of it, and gave it for a present to Solomon, in lieu of a dowry for his daughter. 1 Kings ix. 16.

7. PHARAOH, or SHISHAK, who entertained Jeroboam in his dominions when he fled from Solomon. He also declared war against Rehoboam, besieged and took Jerusalem, carried away the king's treasures, and those of the house of God, particularly the golden bucklers that Solomon had made. Some think he was the brother of Solomon's queen, and did this to avenge the neglect of his sister by Solomon. See EGYPT, § 8; SHISHAK; and 1 Kings xiv. 25—29.

8. PHARAOH, with whom Hezekiah made a league against Sennacherib king of Assyria, A. M. 3292. (See SENNACHERIB.) He is probably the same whom Herodotus names SETHON, priest of Vulcan, who came to meet Sennacherib before Pelusium, and to whose assistance Vulcan was believed to have sent an army of rats, which gnawed the bow-strings and the thongs of the bucklers of Sennacherib's soldiers. See EGYPT, § 9.

9. PHARAOH NECHO, or *Nechos*, son of Phamiticus, who made war with Josiah, and subdued him. See 2 Chron. xxxv. 20—24. Herodotus also mentions this prince. See EGYPT, § 10; and NECHO II.

10. PHARAOH HOPHRAH, who entered into an alliance with Zedekiah king of Judah, and tempted to assist him against Nebuchadnezzar king of Chaldaea. Against this Pharaoh Ezekiel pronounced several of his prophecies. (See Ezek. xxix. xxx.) He is called Apries in Herodotus, I. ii. c. 161. He is also mentioned in Habakkuk ii. 15, 16. See also Isaiah xix. 11. and Jeremiah xlii. 16, &c. See APRIES, and EGYPT, § 10.

PHARAON, or *PARO*, is the name of a game of chance, the principal rules of which are: the banker holds a pack consisting of 52 cards; he

P p

draws

draws all the cards one after the other, and lays them down alternately at his right and left hand; then the *ponte* may at his pleasure set one or more stakes upon one or more cards, either before the banker has begun to draw the cards, or after he has drawn any number of couples. The banker wins the stake of the *ponte* when the card of the *ponte* comes out in an odd place on his right hand, but loses as much to the *ponte* when it comes out in an even place on his left hand. The banker wins half the *ponte's* stake when it happens to be twice in one couple. When the card of the *ponte*, being but once in the stock, happens to be last, the *ponte* neither wins nor loses; and the card of the *ponte* being but twice in the stock, and the last couple containing his card twice, he then loses his whole stake.

PHARAS, *n. f.* See PERSIA, § 2.

PHARE, *n. f.* [*pharus*, Lat. *φῶς*, Gr.] A watch tower; a light house. *Bailey*. See PHAROS.

PHAREZ, son of Judah and Tamar (Gen. xxxviii. 27, 28, &c.), so named, from the circumstance attending his birth, by his mother, *Pharez*, i. e. one breaking forth. His sons are mentioned in Numb. xxvi. 20, 21; and his posterity down to Joseph and Mary, in Matt. i. and Luke iii.

PHAREZITES, the descendants of PHAREZ.

(1.) PHARIS. See PHARÆ.

(2.) PHARIS, a town of Laconia. *Pauf.* iii. c. 10.

* PHARISAICAL, *adj.* [from *pharisee*.] Ritual; externally religious; from the sect of the Pharisees, whose religion consisted almost wholly in ceremonies.—The causes of superstition are pleasing and sensual rites, excess of outward and *pharisaical* holiness. *Bacon*.—Suffer us not to be deluded with *pharisaical* washings. *King Charles*.

PHARISAICALNESS, *n. f.* Acting hypocritically. *Bailey*.

PHARISAISM, *n. f.* The profession or opinions of the Pharisees; to hypocry. *Bailey*. Serrarius places the origin of Pharisaism about the time of Ezra; Maldonat makes it only to have arisen a short time before our Saviour's birth. Others, with more probability than either, refer it to the time of the Maccabees.

PHARISEES, a famous sect of the Jews, who distinguished themselves by their zeal for the traditions of the elders, which they pretended, were delivered to Moses from Mount Sinai, along with the law, and therefore both were of equal authority. From their rigorous observance of these traditions, they looked upon themselves as more holy than other men, and therefore separated themselves from those whom they thought sinners or profane, so as not to eat or drink with them; and hence, from the Hebrew word *pharis*, i. e. to separate, they had the name of *Pharisees* or *Separatists*. This sect was one of the most ancient and most considerable among the Jews; but its original is not very well known. It was in great repute in the time of our Saviour, and must have had its original at the same time with the traditions; and they grew up together, till at length they had gained ground so far, that the traditional law swallowed up the written. They held a resurrection of the body, and supposed a certain bone to remain uncorrupted, to furnish the matter of which the resurrection body was to be formed.

They did not, however, believe that all mankind were to be raised from the dead. A resurrection was the privilege of the children of Abraham alone, who were all to rise on Mount Zion; their incorruptible bones, wherever they might be buried, being carried to that mountain below the surface of the earth. The state of future felicity in which the Pharisees believed was very gross: they imagined that men in the next world, as well as in the present, were to eat and drink, and enjoy the pleasures of love, each being reunited to his former wife. Hence the objection stated by the Sadducees, which our Saviour so satisfactorily refuted. (See Matt. xxii. 23—33.) The Pharisees seem to have had some confused notions, probably derived from the Chaldeans and Persians, respecting the pre-existence of souls; and hence Christ's disciples asked him concerning the blind man. (See John ix. 2.) With the Essenes, they held absolute predestination; and with the Sadducees, free-will; but how they reconciled these seemingly incompatible doctrines is nowhere explained. The sect of the Pharisees was not extinguished by the ruin of the Jewish commonwealth. The greatest part of the modern Jews are still of this sect; being as much devoted to traditions or the oral law as their ancestors were. See CABBALISTS, KARAITES, ESENESES, SADDUCEES, &c.

PHARITÆ, people of Pharis. See PHARÆ.

PHARKIRCHEN, a town of Lower Bavaria; 19 m. SW. of Dingelzingen, and 24 W. of Passau.

PHARKOVA, a town of Russia, in Tobolsk, on the Niznei Tunguska, 528 miles ESE. of Turchansk. Lon. 124. 40. E. Ferro. Lat. 61. 35. N.

PHARMACA, among the ancients, meant medicated or enchanted compositions of herbs, minerals, &c. some of which, when taken inwardly, were supposed to cause blindness, madness, love, &c.: others infected by touch; such was the garment sent by Medea to Creusa, prepared *secundum artem*; and others operated upon persons at a distance. *Pharmaca foteria* were employed as antidotes against these mischievous compositions: thus the herb moly preserved Ulysses from the magical influence of Circe. The laurel, the rhamnus, the flea-bane, the jasper-stone, were used for similar purposes. See *Potter's Græc. Ant.*

(1.) * PHARMACEUTICAL. } *adj.* [*φάρμακον*, from *φάρμακον*.]

(1.) * PHARMACEUTICK. } *adj.* [*φάρμακον*, from *φάρμακον*.] Relating to the knowledge or art of pharmacy, and preparation of medicines.

(2.) PHARMACEUTIC CHEMISTRY. See PHARMACY, § 7, 8.

(3.) PHARMACEUTIC OPERATIONS. See PHARMACY, *Append. Sect. V.*

PHARMACI, were two persons who were employed in the lustration or purification of cities. Some say they were both men; but others maintain, that a man to represent the males, and a woman to represent the females, performed this office. They performed sacrifice, and wore figs about their necks, called *αμάρτυρες*; those of the man were blackish, and those of the woman white. Figs were an emblem of fertility, which they doubtless prayed for on these solemn occasions.

PHARMACITIS. See AMPELITES.

PHARMACO-CHEMIA, a branch of the chemical art, which treats of the preparation of medicines.

dicines. It is so named by way of distinction from SPAGARICO-CHEMIA, that species of chemistry which is wholly employed about the transmutation of metals by the philosopher's stone.

* PHARMACOLOGIST. *n. f.* [*φαρμακον* and *λογος*.] One who writes upon drugs.—The osteocolla is recommended by the *pharmacologists* as an absorbent. *Woodward*.

(1.) * PHARMACOLOGY. *n. f.* [*φαρμακον* and *λογος*.] The knowledge of drugs and medicines.

(2.) PHARMACOLOGIA, signifies also a treatise of medicines, or the art of preparing them, judging of them, &c.

(1.) * PHARMACOPOEIA. *n. f.* [*φαρμακον* and *ποιω*; *pharmacopoeia*, Fr.] A dispensatory; a book containing rules for the composition of medicines.

(2.) PHARMACOPOEIA, [from *φάρμακον* remedy, and *ποιω* to make,] means a treatise describ-

ing the preparations of medicines, with their uses, manner of application, &c. We have various pharmacopœias, as those of Banderon, Quercetan, Zwelfer, Charas, Bates, Salmon, Lemery, Lewis, &c. The latest and most in esteem are the Edinburgh and London dispensatories. See PHARMACY.

PHARMACOPOEUS, or } an apothecary; or
PHARMACOPOLA, } a person who pre-

pares and sells medicines. (See APOTHECARY.) The word is seldom used but by way of ridicule. It is formed from *φάρμακον* and *πωλις* to sell. See Horace, Satire 2. lib. i. ver. 1.

* PHARMACOPOLIST. *n. f.* [*φαρμακον* and *πωλις*; *pharmacopole*, Fr.] An apothecary; one who sells medicines.

PHARMACUM, [*φάρμακον*,] a medicament or medicine; whether of a salutary or poisonous quality.

P H A R M A C Y.

DEFINITIONS AND DIVISIONS OF PHARMACY.

1. * PHARMACY. *n. f.* [from *φάρμακον*, a medicine; *pharmacie*, Fr.] The art of practice of preparing medicines; the trade of an apothecary.—

Each dose the goddess weighs with watchful eye,

So nice her art in impious *pharmacy*. *Garth*.

2. PHARMACY is also the art of preserving, and compounding substances, for the purposes of medicine. This art has been commonly divided into two branches, called GALENICAL and CHEMICAL PHARMACY. But for this division there is no foundation in nature: and accordingly processes in one pharmacopœia referred to the head of Chemical, are in another referred to the head of Galenical. There can be no doubt, that even the most simple pharmaceutical preparations are to a certain extent chemical. Hence this division, founded on prejudice, and supported merely by a veneration for antiquity, is now banished from almost every modern pharmacopœia.

3. Pharmacy has also been divided into *Theoretical* and *Practical*; the first, consisting not merely of speculative opinions, but of a knowledge of facts and principles, tending to explain the *rationale* of processes; the latter, comprehending the mere manual labour employed in processes.

4. The former of these may therefore be justly styled *Scientific Pharmacy*. And there can be no doubt that an acquaintance with it is essentially necessary to the physician as well as the apothecary; for without it he must often err in the forms of preparations and compositions which he employs; and must be often deceived in the effects resulting from compositions, when he infers their properties from the known powers of the ingredients in their separate state.

5. The theory of pharmacy therefore is the same with that of chemistry; as are also the operations, which remain to be discussed here only in as far as they are made subservient to the medicinal art,

distinct from that which is purely chemical. The objects of pharmacy, however, are much more limited than those of chemistry; the latter comprehending, in the utmost latitude of the word, almost every substance in nature; while pharmacy regards only such bodies in the vegetable, animal, and mineral kingdoms, as, by their effects on the human frame, tend to preserve health, or to restore it when lost.

INTRODUCTION.

6. The ingenious Mr MURRAY, lecturer on Chemistry, Materia Medica, and Pharmacy, at Edinburgh, justly observes, in the preface to his *Elements of Materia Medica and Pharmacy*, lately published, that there is "no work adapted to convey just ideas on these branches of Medicine in their present state. With the exception of the new and valuable edition of the *Edinburgh Dispensatory* by Dr DUNCAN, junior, published since the greater part of this (Mr Murray's) treatise was written, there is no elementary work on Pharmacy, in which the discoveries of modern Chemistry are introduced: and former systems of Materia Medica, whatever may have been their merits, have in some measure become obsolete and deficient, in consequence of the changes that have taken place, within these 20 years, in the theory and practice of medicine, and in the sciences with which it is connected."

7. The first part of Mr MURRAY's excellent Treatise is allotted to the general principles of PHARMACEUTIC CHEMISTRY. For this branch of the subject, which is most ably handled by Mr Murray, we must refer our readers to the article CHEMISTRY, where the substance of these principles will be found; and shall here only add Mr Murray's general definition.

8. "PHARMACEUTIC CHEMISTRY is that department of chemical Science, which investigates the composition and chemical relations of bodies, with a view to their medicinal properties; and explains those operations, by which they are fitted to act with more efficacy or safety as remedies

against disease. It includes those facts and principles which connect *Materia Medica* and Pharmacy, the enumeration of which forms the proper introduction to the study of these two branches of Medicine."

9. *MATERIA MEDICA* forms the 2d division of Mr Murray's useful work. For this too we must refer the reader to our article *MATERIA MEDICA*, as it is impossible to make room for Mr Murray's elegant and extensive arrangement of the substances that come under this branch of medical Science. But as Mr Murray assures us, that he has "adopted that arrangement, which, after mature deliberation, appears preferable to any other,—that of classing the different substances according to their medicinal powers," we shall give a general view of this new and advantageous arrangement. "In the selection of the articles," (he adds) "I have been careful to exclude such as have been discarded from modern practice, and which an undue regard to antiquity has too long retained in publications on *Materia Medica*."

10. Mr MURRAY's arrangement of medicines, consists of the following XXI classes: viz. 1. "Narcotics: 2. Antispasmodics: 3. Tonics: 4. Astringents: 5. Emetics: 6. Cathartics: 7. Emmenagogues: 8. Diuretics: 9. Diaphoretics: 10. Expectorants: 11. Sialagogues: 12. Errhines: 13. Epispastics and Rubefacients: 14. Refrigerants: 15. Antacids: 16. Lithontriptics: 17. Eucharotics: 18. Anthelmintics: 19. Demulcents: 20. Diluents: 21. Emollients." See these articles in their order. But we would advise the student of medicine and pharmacy, for full satisfaction on this branch of the subject, to consult Mr Murray's valuable work itself, vol. 1.

11. The 3d part is devoted to PHARMACY, properly so called. "*The Pharmacopœia of the Edinburgh College*," (says Mr Murray) "affording a selection of Pharmaceutical preparations, superior, perhaps to any other, and using likewise the established language of chemistry and natural history, has been adopted as the basis of this part of the work. To a translation of its processes, I have added, under each preparation, its medicinal uses and dose, with the theory of the process, where this was requisite. The corresponding preparations of the *London Pharmacopœia* are likewise noticed, as well as a few, which, though not inserted in either *Pharmacopœia*, are occasionally used in practice."

12. "As there are some peculiarities with regard to the modes of preparing and administering the gases, I have not placed those of them, which may be medicinally employed, under their appropriate classes in the *Materia Medica*, but have thrown them into an *Appendix*; to which also, for a similar reason, I have referred the consideration of ELECTRICITY and GALVANISM, as medicinal agents. Lastly, as connected with these subjects, I have subjoined the heads of a lecture, which I have been accustomed to deliver on extemporaneous prescriptions."

SECT. I. GENERAL REMARKS on the PRESERVATION and COMPOSITION of MEDICINES.

13. PHARMACY, as above defined, is the art of

PRESERVING, PREPARING, and COMPOUNDING MEDICINES.

14. "The PRESERVATION of medicine, (says Mr Murray), is its least extensive part. It includes principally the general rules for collecting plants at certain seasons, or in particular states of maturity, and those by which they are dried or preserved from the injuries they would sustain by exposure to light, air, and moisture. It comprehends, in like manner, rules for the collection and preservation of animal and mineral substances." For these rules, see *MATERIA MEDICA*, *Scd.* XIV.

15. "That part of Pharmacy," (continues Mr Murray), "termed the PREPARATION of medicines, includes a variety of important operations. The virtues of those remedies, which are derived from the vegetable kingdom, generally depend on one or other of the proximate principles of each substance; on its gum, its resin, essential oil, or some other. These different principles are dissolved by different agents, by water, alcohol, &c. and as they are often, as they exist in the entire vegetable, mixed with much inert matter, it is of advantage to extract the active principle, by means of its proper solvent, and to exhibit it in its pure and concentrated state. Hence have arisen the various pharmaceutic preparations of *infusions, decoctions, tinctures, extracts*, &c. these being all processes by which the active matter of any substance is separated from the inert matter, with which it is naturally mixed, and differing from each other only in the solvent employed, or in the form to which the solution is reduced."

16. "Sometimes, also, the principles of these substances are extracted by other means, as when an unctuous oil is obtained by expression, or an essential oil by heat. This oil may also be combined with water or alcohol, and thus distilled waters or spirits are formed."

17. "By such processes, we extract only a principle previously existing in any particular substance; we form no new remedy, but merely obtain the same virtue in a different form. In other cases Pharmacy produces remedies altogether new. These are always the result of chemical action; they are either compounds; produced by the combination of two or more chemical agents, or they are the products of chemical decomposition. In this manner are obtained the various saline and metallic preparations. These preparations, too, are often dissolved in various fluids, in order that they may be conveniently exhibited; processes analogous to the infusions or tinctures of vegetable substances." See CHEMISTRY, *Index*.

18. "COMPOSITION," (says our ingenious Author), "is the last part of PHARMACY. In this no chemical combination is effected; but different medicines are merely mixed together, with the intention of promoting their efficacy, of correcting their operation, of covering their taste or flavour, or of giving them a commodious form."

19. "From this view of the objects of Pharmacy, it is evident, that it is principally a particular application of CHEMISTRY. Its operations are either directly chemical, or require that the chemical properties of the bodies operated on should be accurately known."

SECT.

SECT. II. *Of the PREPARATION of SIMPLE MEDICINES.*

20. "*Carbonas calcis preparatus olim Creta Preparata et Cancrorum Lepilli, vulgo Oculi Cancrorum Preparati.* Prepared carbonat of lime, formerly prepared chalk, and prepared crabs stones, commonly called crabs eyes.—Carbonat of lime, whether the softer variety commonly named chalk, or the harder, called crabs stones and crabs eyes, after being rubbed to powder in an iron mortar, and levigated with a little water on a porphyry stone, is to be put into a large vessel. Water is to be poured upon it, and after the vessel has been frequently agitated, it is to be poured off, loaded with a fine powder. On the water remaining at rest, a subtile powder subsides, which is to be dried. The coarse powder which the water could not suspend, is to be again levigated, and treated in the same manner."

21. "Chalk is a native carbonat of lime, seldom perfectly pure. The crabs stones are concretions found in the monarch of the river craw fish, (*CANCER ASTACUS*), consisting of carbonat of lime, with a portion of animal gelatin. By the above process, both are reduced to a very fine powder, to render them more fit for medicinal use. They are employed as antacids in a dose of one or two drachms." See CHALK.

22. "Red coral, (*Corallium Rubrum*), is ordered to be prepared in a similar manner in the London Pharmacopœia" but as it has no qualities but those of carbonat of lime, Mr Murray says "there is no necessity for retaining it."

23. "*Carbonas ferri preparatus, olim Rubigo Ferri Preparata.* Prepared carbonat of iron, formerly prepared rust of iron.—"Purified filings of iron are to be frequently moistened with water till they fall into rust, which is to be rubbed to a fine powder." DURING exposure to air and moisture, iron is oxydated, and this oxyd is found to be combined with carbonic acid, absorbed probably from the atmosphere. As a chalybeate it is more active than the pure metal, and more mild than the other saline combinations of iron. Its dose is from 10 to 20 grains.

24. "*Carbonas zinci impurus preparatus; olim Lapis Calaminaris Preparatus.* Prepared impure carbonat of zinc, formerly prepared calamine stone.—"Impure carbonat of zinc roasted by those who make brass, is to be prepared in the same manner as carbonat of lime."

25. "Calamine is an ore of zinc, in which sometimes the metal is merely oxydated, and in other varieties combined with carbonic acid. It is used as an application to superficial inflammation, dusted on the part, and as the basis of the common healing cerate. For these purposes, it requires to be very finely levigated."

26. "*Ferri limatura purificata.* Purified filings of iron.—"A sieve being placed over the filings let a magnet be applied, that the filings may be drawn through the sieve upwards."

27. "*Ferri oxydum nigrum purificatum, olim Ferri Squame Purificata.* Purified black oxyd of iron, formerly purified scales of iron.—"Let the scales of black oxyd of iron, which are found at

the anvils of the workman, be purified by the application of the magnet; for the magnet attracts only the more small and pure scales, leaving those which are larger and less pure."

28. "The scales of iron are the small fragments struck off from the metal when it is heated red-hot. Passing through the atmosphere at this temperature, they are oxydated, but so imperfectly, as to admit of this mode of purification by the magnet. They are used only in making some of the other chalybeate preparations."

29. "*Oxydum zinci impurum præparatum, olim Tutia Præparata.* Prepared impure oxyd of zinc formerly prepared tutty.—"To be prepared as carbonat of lime."

30. "*Sulphas aluminæ exsiccatus, olim alumen Usum.* Dried sulphat of argil, formerly.—"Let sulphat of Argil be melted in an earthen or iron vessel, and exposed to the heat applied until it cease to boil."—By this process the alum loses its water of crystallization, and becomes more active as an escharotic, for which purpose this preparation is used."

31. "*Sulphur sublimatum lotum.* Washed sublimed sulphur.—"Take of sublimed sulphur 1 lb.; water 4 lb.; boil the sulphur a little with the water, then pour off this water; by the affusion of cold water wash away all acid; lastly, dry the sulphur."

32. "A small portion of sulphur in its sublimation sometimes suffers oxydation from the air of the chamber into which it is sublimed, and hence acquires a slight acidity, which the present process is designed to remove. This is so rarely the case, however, that it is one perhaps unnecessary."

33. "*Sulphur præcipitatum. Pharm. Lond.* Precipitated sulphur.—"Take of sulphurated kali (sulphurate of pot-ash), 6 oz.; distilled water, 1½ lb. diluted vitriolic (sulphuric) acid, as much as is sufficient; boil the sulphurated kali in the distilled water till it is dissolved. Filter the liquor through paper, and add to it the diluted vitriolic acid. Wash the precipitated powder by repeated affusions of water until it become insipid."

34. "In this process, sulphur is first combined with pot-ash by fusion; and this compound dissolved in water, is decomposed by sulphuric acid, which combines with the pot-ash, and precipitates the sulphur. It might be supposed, therefore, to have no advantage. The sulphur, however, from its state of aggregation, is of a much whiter colour than it can be obtained by any other means, and is therefore preferable in forming an ointment for external application."

35. "*Sulphuretum antimonii præparatum, olim antimonium præparatum.* Prepared sulphurat of antimony, formerly prepared antimony.—"Let sulphurat of antimony be prepared in the same manner as carbonat of lime." As a remedy in chronic rheumatism it has been given in a dose of ʒ or 10 gr. daily."

36. "*Meldepumatum.* Clarified honey.—"Liquefy honey by a waterbath, and remove the scum."

37. "*Herbarum et florum exsiccatio.* Drying of herbs and flowers.—"Herbs and flowers are to be dried with the gentle heat of a stove, or a common fire, in such a quantity that the drying may be done as quickly as possible; for thus their virtues are best preserved. The mark of this is their retaining completely

completely their native colour. The leaves of hemlock, and others containing a subtle volatile matter, are, immediately after drying, to be rubbed to powder, and kept in glass vessels well stoped."

38. "By drying herbs and flowers, or expelling a great part of the water they contain, those chemical changes they would spontaneously suffer are prevented, and they are rendered capable of being preserved. The more quickly they are dried, they retain their virtues more completely." See MATERIA MEDICA, SECT. XIV.

39. "*Scilla maritima esficcata*. Dried sea quill.—"Cut the root of the sea quill, its outer covering having been removed, transversely into thin slices, and dry it by a gentle heat. The mark of its being properly dried is, that although rendered friable, it retains its bitterness and acrimony." By drying, the squill loses four fifths of its weight, and with very little diminution of its virtue, if too much heat has not been applied. It is in this state that squill is commonly employed in medicine. Dose, from 1 to 3 grains.

40. "*Pulparum extractio*. Extraction of pulps.—"Boil those fruits which afford a pulp, if unripe, or if ripe and dry, with a little water, that they may become soft. Then express the pulp through a hair sieve, and boil it with a gentle heat in an earthen vessel, stirring it frequently that it may not burn, until it attain the consistence of honey. The pulp of cassia fistula is to be boiled from the bruised pod; and by evaporating the water, to be reduced to the due consistence. The pulps of ripe and fresh fruits are to be pressed through a sieve, without previous boiling."—"These directions are given principally for the preparation of the pulps of several fruits, which enter into the composition of the electuary of senna. Pulps are seldom otherwise medicinally employed, and cannot be long preserved unchanged.

41. "Under the chapter corresponding with this in title in the London Pharmacopœia, are several additional preparations, of which it may be necessary to take notice.

42. "*Ammoniæ purificatio*. Purification of gum ammoniac.—"If ammoniac seem not pure, boil it in water, until it softens; and by a press, force it through an hempen bag; then put it aside, that the resinous matter may subside. Evaporate the water, mixing towards the end of the evaporation the resinous with the gummy part. Assafoetida and other similar gum resins may be purified in the same manner. Any gum also, which melts easily, such as galbanum, may be purified by putting it into an ox-bladder, and keeping it in boiling water, till it become so soft, that it may be pressed through a strong linen cloth, and freed from its impurities."

43. "By such processes, the qualities of the substances are always injured, and they are unnecessary, since these gums, when not sufficiently pure, ought not to be used.

44. "*Styracis purificatio*. Purification of storax.—"Having dissolved storax in alcohol, strain the liquor, and distil it with a gentle heat to a proper consistence." This is equally unnecessary with the preceding.

45. "*Cornu cervi ustio*. Burning of hartshorn.—"Burn pieces of hartshorn till they become per-

fectedly white, then rub them to a very fine powder."—"Animal bones consist of gelatin with phosphat of lime; by burning, the former is destroyed, the latter remains. It was considered as an antacid, but it cannot be referred to that class. It is sometimes an ingredient in dentifrice compositions.

46. "*Millepedæ preparatæ*. Preparation of millepedes.—"Suspend slaters, inclosed in a thin linen bag, over proof-spirit, heated in a close vessel, that they may be killed by that vapour, and rendered friable."—"It is singular that this absurd preparation should have been so long retained in our Pharmacopœias as it has been.

47. "*Spongæ ustio*. Burning of sponge.—"Bruise sponge cut into small pieces, and, when freed from stony matter, burn it in a close iron vessel until it become black and friable." Then rub it into a fine powder."—"Burnt sponge consists chiefly of carbonaceous matter, with a small portion of carbonat of soda. It has been celebrated as a remedy in scrofula, in a dose of a scruple or half a drachm."

SECT. III. CONSERVÆ.—CONSERVES.

48. "In these preparations, vegetable matter bruised is mixed with about three times its weight of sugar, and beat into an uniform pulpy mass. It was supposed that the sugar, by its antiseptic quality, would prevent the decomposition of the vegetable matter. This, however, is not the case. This form of preparation, therefore, is not applied to any active medicine, the few conserves that are retained being employed merely as vehicles for other medicines, and for giving them convenient forms.

49. "The conserves in the Edinburgh Pharmacopœia are the following: 1. *Conserva Corticis exterioris recentis fructus Citra Aurantii, Radulæ abradi*: Conserve of the outer rind of the orange rasped by a grater. 2. *Conserva Fructus Rosæ Caninæ maturi, a seminibus eorumque pube folliculæ purgati*: Conserve of the fruit of dog-hips carefully freed from the seeds and included down. 3. *Conserva Petalorum Rosæ Gallicæ nondum explicitorum*: Conserve of the unblown petals of the red rose. In each of these, the vegetable substance is beat into a pulp, adding gradually, during the beating, three times its weight of sugar.

50. "To these the London College add, 1. *Conserva absinthii maritimi*, Conserve of sea worm-wood; 2. *Conserva lujule*, Conserve of wood sorrel; 3. *Conserva ari*, Conserve of arum; 4. *Conserva pruni flosæstris*, Conserve of sloes; 5. *Conserva scillæ*, Conserve of squill;—preparations which scarcely require any particular notice. To the first the form of conserve is very ill adapted; and in the last, the active matter of the squill cannot be preserved long by this preparation."

SECT. IV. SUCCI.—JUICES.

51. "VEGETABLE juices are obtained by expression. They consist of various proximate principles of the plant, particularly of mucilage, extractive matter, tannin, fecula, and some saline substances dissolved or suspended in water, and when recent, may possess the medicinal virtues which belong to any of these principles. It is impossible, however,

however, to preserve vegetable matter in solution in water for any length of time without suffering decomposition; and hence juices are unfit for official preparations. Only one is retained in the Edinburgh and London Pharmacopœias, and it might have been discarded.

52. "*Succus cochleariæ officinalis compositus*. Compound juice of scurvy-grass.—"Take of juice of Scurvy-grass, juice of water cresses expressed from fresh-gathered herbs, juice of the fruit of the orange, of each two pounds; spirit of nutmeg half a pound: mix and put aside till the impurities have subsided; then pour off the liquor." Since the powers of the citric acid have been fully ascertained it is very seldom prescribed.

SECT. V. SUCCI SPISSATI, vulgo EXTRACTA.—
INSPISSATED JUICES, commonly termed EXTRACTS.

54. "WHERE the virtues of any vegetable reside in a principle which is contained in the juice obtained from it by expression, and where this principle is at the same time not volatile, inspissation by a moderate heat will contribute to its preservation, as the soft mafs obtained by this process is much less liable to chemical changes, than when the reaction of constituent parts is favoured by dilution with water. The preparation, however, is still liable to disadvantages. By the heat employed in the inspissation, part of its active matter is generally dissipated, and another source of injury is derived from the oxygenation which the extract is liable to suffer, when thus heated in contact with the atmospheric air; and the preparation itself being still soft and humid, must gradually undergo chemical alterations. Hence, inspissated juices are generally variable in their medicinal qualities.

54. "The process for these preparations is described in the Edinburgh Pharmacopœia under the first of them.

55. "*Succus spissatus aconiti napelli*. Inspissated juice of aconite, or wolfsbane.—"The fresh leaves of the aconite are to be bruised, and being inclosed in a hempen bag, are to be pressed strongly, that they may give out their juice, which is to be reduced by evaporation in open vessels, heated by boiling water saturated with muriat of soda, to the consistence of thick honey. The mafs, after it has cooled, is to be kept in glazed earthen vessels, and moistened with alcohol."

56. "This inspissated juice is the form under which wolfsbane has been usually administered. It has been given principally in obstinate chronic rheumatism, in a dose of half a grain night and morning, and gradually increased to 5 or 6 grains. In the same manner are prepared the following inspissated juices from the leaves of their respective plants.

57. "*Succus spissatus atropæ belladonnæ*. Inspissated juice of deadly nightshade.—This has been recommended in scirrhus and some convulsive affections, in a dose of one grain, gradually increased.

58. "*Succus spissatus conii maculati*. Inspissated juice of hemlock.—Under this form, hemlock was employed by Storck in scirrhus and cancer. The dose given is at first two grains, but it can be

largely increased, and has at length been taken to the extent of several drachms in the day.

59. "*Succus spissatus hyoscyami nigri*. Inspissated juice of black henbane.—This plant, resembling opium in its powers, has been employed frequently as a substitute for it. The dose is one grain, which requires, if continued, to be increased.

60. "*Succus spissatus lactucæ virosæ*. Inspissated juice of strong-scented lettuce.—This preparation was recommended as a remedy in dropsy by the German practitioners, in a dose of 4 or 5 grains, gradually increased to 1 or 2 drachms in 24 hours. It has been little used in this country.

61. "*Succus spissatus sambuci nigrae, vulgo Rob Sambuci*. Inspissated juice, or Rob of Elder.—The preparation of this is peculiar. "Five pounds of the juice of elder berries, and one pound of sugar, are to be boiled with a gentle heat to the consistence of thick honey." In the *Lond. Pharm.* it is merely inspissated without sugar.

62. "*Succus spissatus momordicæ elaterii, vulgo Elaterium*. Inspissated juice of wild cucumber, or Elaterium.—"Cut the ripe fruit of the wild cucumber, and pass through a very fine hair sieve the juice lightly expressed; boil it a little, and set it aside for some hours until the thicker parts subside. Pour off the thinner part which floats above, and separate the rest by straining. The thicker part which remains after the straining, being covered with a linen cloth, is to be dried by a gentle heat."

63. "This is a very violent cathartic. It has been used as a hydragogue in dropsy, and as a cathartic in obstinate constipation, where others have failed. It is not often used.

64. "The additional preparations of this kind in the London Pharmacopœia are *Succus spissatus ribis nigri*, Inspissated juice of black currant, and *Succus spissatus lemonis*, Inspissated juice of lemon, which, require no particular observation.

SECT. VI. OLÆA FIXA.—FIXED OILS.

65. "THE chemical properties of these oils exist unmixed in the fruit and seeds of vegetables, and are obtained by expression, or decoction with water. The former is in general to be preferred; and to afford the oil pure it must be performed without heat, which, though it favours the separation of the oil, communicates to it an unpleasant flavour. To preserve them from becoming rancid, they ought to be kept secluded from the air.

66. "A process in pharmacy somewhat difficult is to mix these oils with any watery fluid, so that they may be conveniently exhibited. It is usually done by mucilage, or an alkali. If triturated with mucilage, and a small quantity of sugar, the oil is diffused through the water, and a milky liquor formed. A combination still more permanent is effected, by adding a few drops of water of ammonia, or 2 or 3 grains of carbonat of potash. The directions for preparing these oils, in the Edinburgh Pharmacopœia, are given under the next article.

67. "*Oleum amygdalæ communis*. Oil of almonds.—"Take of fresh almonds any quantity. Bruise them in a stone mortar, inclose them in a hempen bag, and express the oil by a press without heat." This is the purest of the expressed oils.

68.

68. "In the same manner is to be expressed *Oleum lini estativum*, Oil of linseed, from the seeds of the plant. Being rather less pure, it is used only as an external application.

69. "To these the London College add *Oleum ricini*, Castor oil, and *Oleum sinapis*, Oil of mustard. The former is usually prepared, however, in the West Indies by decoction, and is milder than when obtained by expression; and the latter is scarcely applied to any use. The olive oil, which of all the expressed oils is most largely employed, is imported from the South of Europe."

SECT. VII. EMULSIONES.—EMULSIONS.

70. "EMULSIONS are preparations in which the expressed oil of seeds or kernels is suspended in water by the medium of the mucilage, and perhaps also of the fecula which the seeds contain. They are always opaque and milky: as the oil is merely diffused through the water, it gradually collects and rises to the surface: and owing to the vegetable matter dissolved in the liquor, they are also liable to become sour. They likewise suffer decomposition from vinous spirits or acids.

71. "*Emulso amygdale communis*. Almond emulsion.—"Take of sweet almonds 1 oz.; water 2½ lb.; beat the blanched almonds carefully in a stone mortar, adding the water gradually, then strain." This is used merely as a demulcent in catarrh and gonorrhœa, or during the application of a blister, being drunk *ad libitum*.

72. "*Emulso gummi mimosæ niloticæ, vulgo Emulso Arabica*. Arabic emulsion.—"This is made in the same manner, adding, while beating the almonds, 2 oz. of mucilage of gum Arabic." It is used in the same cases as the preceding, and is supposed to have a greater share of demulcent power.

73. "*Emulso camphorata*. Camphor emulsion. "Take of camphor one scruple; blanched sweet almonds 2 dr.; refined sugar 1 dr.; water 6 oz.: to be made in the same manner as the almond emulsion." Camphor is less apt to induce nausea when given in a liquid than when in a solid form; and this is one of the best forms of preparation. Its dose is two ounces." See CAMPHOR.

SECT. VIII. INFUSA.—INFUSIONS.

74. "INFUSION is a term employed to denote that operation, in which water, on remaining for some time on vegetable matter dissolves part of it; and also to express the preparation which results from that operation. It is obvious, that infusion, understood in this sense, can be applied with propriety only to those plants whose virtues depend on principles soluble in water. The strength of the infusion is considerably influenced by the temperature of the fluid, hot water dissolving more of the soluble matter than cold, while cold water, from this circumstance, frequently affords a preparation which, if weaker, is more grateful. From dried vegetables, the soluble matter is in general more easily obtained than from those which are recent. Infusions are always extemporaneous preparations, and cannot be preserved in a sound state for more than a few days.

75. "*Infusum cinchonæ officinalis*. Infusion

of Peruvian bark.—"Take of powdered Peruvian bark, one ounce; water, 1 lb. Macerate them for 24 hours, and strain."—This preparation is used chiefly in dyspepsia, in a dose of 2 oz. occasionally.

76. "*Infusum digitalis purpureæ*. Infusion of foxglove.—"Take of the dried leaves of foxglove, one drachm; boiling water, 8 ounces; spirit of cinnamon, one ounce. Macerate for 4 hours and strain."

77. "Infusion is the form under which Dr Whithering, who introduced the use of digitalis in dropsy, recommended it to be given. The dose is half an ounce, taken twice a-day, and gradually increased till the effects of the remedy appear.

78. "*Infusum gentianæ luteæ compositum, vulgo infusum Amarum*. Compound infusion of gentian. "Take of gentian root, half an ounce; dried orange-peel, one drachm; coriander seeds, half a drachm; diluted alcohol, 4 ounces; water, 1 lb. First pour on the alcohol, and after 3 hours the water; then macerate without heat for 12 hours, and strain."—This bitter infusion is employed in dyspepsia, and is much better adapted to continued use than the tinctures. Its dose is 2 ounces occasionally.

79. "*Infusum mimosæ catechu, vulgo Infusum Japonicum*. Infusion of catechu.—"Take of extract of catechu, two drachms and a half; bark of cinnamon, half a drachm; boiling water, 7 ounces; simple syrup, one ounce. Macerate the extract and bark with the water in a cloied vessel for two hours, then strain, and add the syrup." The extract of catechu is completely soluble in water; and possesses all its virtues uninjured. Cinnamon renders it more grateful. Its principal use is in diarrhœa. Its dose, one ounce every 3d or 4th hour.

80. "*Infusum rhei palmati*. Infusion of rhubarb.—"Take of the root of rhubarb, half an ounce; boiling water, 8 oz.; spirit of cinnamon, 1 oz. Macerate the root with the water in a cloied vessel for 12 hours, then adding the spirit, strain the liquor." It is used as a mild cathartic. Dose, two ounces.

81. "*Infusum rose gallicæ*. Infusion of red rose.—"Take of the dried petals of the red rose, 2 oz.; boiling water, 5 lb.; sulphuric acid, one dr.; refined sugar, 2 oz. Macerate the petals with the boiling water in an earthen vessel, which is not glazed with lead, for 4 hours; then having poured on the acid, strain the liquor, and add the sugar."—This infusion is used principally as a moderately astringent gargle, in slight cases of cynanche.

82. "*Infusum tamarindi indicæ cum cassia fenna*. Infusion of tamarind and fenna.—"Take of the prepared fruit of the tamarind, one ounce; fenna leaves, one drachm; coriander seeds, half a drachm; unrefined sugar, half an ounce; boiling water, eight ounces: Macerate them in a close earthen vessel, which is not glazed with lead, shaking frequently, and after four hours, strain the liquor. It may be made also with double or triple the quantity of fenna."

83. "This combination affords a very pleasant purgative, mild in its operation. The whole quantity

tity may be taken at intervals as a dose. If we with a more powerful cathartic, it must be made with an increased proportion of fenna.

84. "In the London Pharmacopœia are two infusions, both of fenna. The first, *Infusum fennæ simplex*, (prepared from fenna, an ounce and a half; ginger, one drachm; and boiling distilled water, one pint; macerated for an hour, and strained;) is given as a cathartic, in a dose to an adult from 2 to 4 oz. The 2d, *Infusum fennæ tartarifatum*, is prepared from fenna, on ounce and a half; coriander seed bruised, half an ounce; acidulous tartrate of potash, two drachms; and distilled water, one pint; the crystals of tartar being dissolved in the water by boiling, and the hot liquor being poured on the fenna and coriander: the maceration being continued for an hour, in a covered vessel, and strained when cold. It is similar to the infusion of fenna and tamarinds, rather less pleasant, but having the recommendation of cheapness. From the larger proportion of fenna it is also more active. Dose from 2 to 4 ounces.

85. "Under the chapter entitled *Infusa*, in the Edinburgh Pharmacopœia, are several preparations which cannot properly be ranked as infusions. The first is an example of a mixture.

86. "*Potio carbonatis calcis, olim potio cretacea*. Chalk potion.—"Take of prepared carbonate of lime, one ounce; refined sugar, half an ounce; mucilage of gum arabic, two ounces. Rub them together, and add gradually of water two pounds and a half; spirit of cinnamon, two ounces." "The chalk in this mixture is merely suspended by the mucilage. It is used as an antacid, 1 or 2 oz. being taken occasionally. With this may be noticed a few mixtures which find a place in the London Pharmacopœia.

87. "*Mistura camphorata*. Camphorated mixture.—"Take of camphor, one drachm; rectified spirit of wine, a little; refined sugar, half an ounce; distilled water, one pint. Rub the camphor with the spirit, afterwards with the sugar; add the water gradually, and strain the mixture." "It is given as a stimulant, in the dose of one ounce every 2d or 3d hour, in fever accompanied with debility.

88. "*Mistura moschata*. Musk mixture.—"Take of musk, two scruples; powdered gum arabic, refined sugar, of each one drachm; rose water, 6 oz. Rub the musk with the sugar, then with the gum, and add the rose water gradually." The dose is one ounce, or an ounce and a half.

89. "*Lac ammoniaci*. Milk of gum ammoniac.—"Take of gum ammoniac, two drachms; distilled water, half a pint: triturate the gum resin with the water poured on gradually, until it become an emulsion." It is given as an expectorant in a dose from half an ounce to an ounce at a time.

90. "*Lac assafoetidae*.—This is prepared in the same manner. In hysteria, it is given in a dose of half an ounce or an ounce, frequently repeated during the paroxysm.

91. "*Mucilago amyli*. Starch mucilage. Phar. Ed.—"Take of starch, half an ounce; water, one pound. Rub the starch, adding gradually the water; then boil them for a short time."

92. "Fecula, of which wheat-starch is a variety, is soluble in boiling water, and forms a gelatinous solution. This starch-mucilage is principally used as a vehicle for giving opium, or other remedies, under the form of enema.

93. "*Mucilago asfragali tragacanthæ*. Mucilage of gum tragacanth.—"Take of gum tragacanth beat to powder, one ounce; boiling water 8 oz. Macerate for 24 hours, and rub the gum carefully, that it may be dissolved; then strain it through linen."

94. "*Mucilago mimosæ niloticæ*. Mucilage of gum arabic.—"Take of powdered gum arabic, one part; boiling water, two parts. Digest with frequent agitation until the gum be dissolved; then strain through linen." This is the mucilage that is usually employed for pharmaceutical purposes. It is also used as a demulcent.

95. "*Mucilago seminum cydonii mali*. Lond. Mucilage of quince seed.—"Take of quince seeds, one drachm; distilled water, 8 oz. Boil with a gentle heat for ten minutes, and strain through linen."

96. "*Aqua calis*. Lime water.—"Take of lime recently prepared, half a pound: put it into an earthen vessel, and sprinkle it with 4 oz. of water, keeping the vessel closed while the lime becomes hot, and falls into powder: then pour on 12 lb. of water, and mix the lime with it by agitation. After the lime has subsided, repeat the agitation; and do so about ten times, keeping the vessel always shut, that the free access of the air may be prevented. Let the water be strained through paper, interposing between the filter and the funnel glass rods, that the water may pass through as quickly as possible. Let it be kept in bottles well stopp'd."

97. "The caution to exclude the air in this process, arises from the supposition that the lime would combine rapidly with the carbonic acid of the atmosphere. After the solution is strained, it is at least necessary that it should be kept in vessels well stopp'd. A very small quantity only of lime is dissolved, about two grains to the ounce. The solution has a styptic taste. It is used as a tonic and astringent. Dose from one to two lb. daily."

SECT. IX. DECOCTA.—DECOCTIONS.

98. "By *Boiling* vegetable substances in water, their active matter is more abundantly dissolved than by simple infusion. The preparation thus obtained is termed a *Decoction*. In a number of cases, part of the matter dissolved by the assistance of the high temperature separates as the liquor cools, especially where it is of a resinous matter; in others, however, it is retained.

99. "Though a larger portion of matter is dissolved by the water in this mode of preparation, yet it cannot be always advantageously employed. Wherever the virtues of the substance subjected to it depend, in whole or in part, on any volatile principle, they are necessarily injured by thus being dissipated. At the temperature of 212°, humid extractive matter combines too with oxygen from the atmospheric air: and perhaps at the same temperature, some vegetable principles suffer decomposition from the re-action of their con-

fituent parts: hence many vegetables suffer injury from boiling, even where this cannot be ascribed to the dissipation of their volatile parts. These circumstances limit considerably the application of this form of preparation. Decoctions are always extemporaneous preparations. In general, during the boiling, the air should be excluded, and the liquor ought to be strained while hot.

100. "*Decoction althææ officinalis*. Decoction of althæa.—"Take of dried althæa root, 4 oz.; raisins freed from seeds, 2 oz.; water, 7 lb. Boil to 5 lb.; put aside the strained liquor till the impurities have subsided, and pour off the clear liquor." The gum of vegetables is not injured by decoction. As the virtues of the althæa depend on this principle, they are obtained entire in this preparation. It is used as a demulcent, being taken *ad libitum*.

101. "*Decoction anthemidis nobilis, vulgo decoction chamæmeli fræ commune*. Decoction of chamomile, or common decoction.—"Take of the dried flowers of chamomile, one ounce; caraway seeds, half an ounce; water, 5 lb. Boil for a quarter of an hour, and strain." This decoction is designed to be used principally as an enema and fomentation.

102. "Similar preparations are inserted in the London Pharmacopœia, under the names of *Decoction pro enemate*, and *Decoction pro fomento*."

103. "*Decoction cinchonæ officinalis, vulgo decoction corticis Peruviani*. Decoction of Peruvian bark.—"Take of Peruvian bark in powder, one ounce; water, one pound and a half. Boil for ten minutes in a covered vessel, and strain the liquor while hot."

104. "As the active part of Peruvian bark is chiefly resin-o-extractive matter, part of it dissolved by the hot water is deposited as the liquor cools. Hence the necessity of straining it while hot. As the same matter suffers oxygenation during boiling, the propriety is obvious of continuing the boiling for a short time only, and in a close vessel. This decoction is given in general when bark in considerable doses is requisite, and where the powder does not remain on the stomach. The dose is 2 oz. repeated occasionally."

105. "*Decoction daphnæ mezerei*. Decoction of mezereon.—"Take of the bark of the root of mezereon, two drachms; of liquorice root bruised, half an ounce; water, 3 lb. Boil with a gentle heat to 2 lb. and strain." The decoction is given in a dose of 6 or 8 oz. three or four times a-day."

106. "*Decoction Geoffrææ inermis*. Decoction of cabbage-tree bark.—"Take of cabbage-tree bark in powder, one ounce; water, 2 lb. Boil with a gentle heat to one pound, and strain." It is given as an anthelmintic, in a dose of 2 lb. to an adult."

107. "*Decoction guajacæ officinalis compositum, vulgo decoction lignorum*. Compound decoction of guaiac.—"Take of guaiac wood shavings, 3 oz.; raisins, 2 oz.; cassia root, liquorice root, of each one ounce; water, 10 lb. Boil the water with the guaiac wood and raisins, on a gentle fire, to 5 lb. adding the roots towards the end of the boiling; then strain without expression."

Under this form guaiac wood is administered as a remedy in cutaneous diseases, and sometimes in chronic rheumatism. It is taken to the extent of 2 or 3 lb. daily.

108. "*Decoction hordei disticbi*. Decoction of barley.—"Take of pearl barley, 2 oz.; water, 2 lb. First wash off with cold water the flour adhering to the barley; then boil the barley for a short time with about half a pound of water, to extract the colouring matter. This being rejected, put the barley thus purified into 5 lb. of boiling water. Boil this to one half, and strain." This decoction is used merely as a diluent in febrile affections."

109. "A similar formula, in which figs, raisins, and liquorice, are added to the barley, is inserted in the London Pharmacopœia, under the title of *Decoction hordei compositum*."

110. "*Decoction polygalæ senegæ*. Decoction of seneka.—"Take of seneka root, one ounce; water, 2 lb. Boil to 16 oz. and strain." This has been used as a remedy in chronic rheumatism, and sometimes as an expectorant in pneumonia. Its dose is 2 or 3 oz. three or four times a-day."

111. "*Decoction smilacis farfaparillæ*. Decoction of farfaparilla.—"Take of farfaparilla root cut, 6 oz.; water, 8 lb. Digest for two hours, in a temperature of about 195°, then take out the root and bruise it; put it again into the liquor, and boil it with a gentle fire to 2 lb.; then express it, and strain." Under this form farfaparilla has been given in the secondary symptoms of syphilis. It has been given also in dysuria."

112. "A few decoctions which have a place in the London Pharmacopœia remain to be noticed."

113. "*Decoction cornu cervi*. Decoction of hartshorn.—"Take of burnt and prepared hartshorn, 2 oz.; gum arabic, six drachms; distilled water, 3 lb. Boil, stirring constantly, to 2 lb. and strain." The burnt hartshorn, consisting chiefly of phosphat of lime, is insoluble in water: therefore the gum arabic only is dissolved."

114. "*Decoction hellebori albi*. Decoction of white hellebore.—"Take of white hellebore root in powder, one ounce; distilled water, 4 pints; rectified spirit of wine, 2 oz. Boil the water with the root to one pint; when the liquor is cold, strain, and add the spirit." This is used as an external application, in some cutaneous diseases, principally in psoa."

115. "*Decoction farfaparillæ compositum*. Compound decoction of farfaparilla.—"Take of farfaparilla root, slit and bruised, 6 oz.; bark of cassia root, shavings of guaiac wood, liquorice root bruised, of each one ounce; mezereon, 3 dr.; distilled water, 10 pints. Macerate with a gentle heat for 6 hours; boil to 5 pints, adding the mezereon towards the end of the boiling; then strain." This decoction is an improvement of the Lisbon diet-drink, once highly celebrated for removing some of the secondary symptoms of syphilis, and promoting the action of mercury. Its dose is 4 or 6 oz. 3 or 4 times a-day. From Dr Russell's experiments, its efficacy appears to depend on the mezereon."

116. "*Decoction ulmi*. Decoction of elm.—"Take of the bark of the elm, fresh bruised, 4 oz.; distilled water, 4 pints. Boil to 2 pints, and

and strain." This decoction has been recommended as a remedy in cutaneous diseases.

SECT. X. SYRUPS.—SYRUPS.

117. "SYRUPS are solutions of sugar in water, either pure, or containing other substances dissolved. They are seldom active medicines; but are principally designed to render others pleasant. The proportion of sugar with which they are generally made is about two parts to one of fluid.

118. "*Syrupus simplex, sive communis.* Simple or common syrup.—"Take of refined sugar beat to powder, 15 parts; water, 8 parts. Dissolve the sugar with a gentle heat, and boil a little, so as to form a syrup." This solution is used merely to communicate sweetness.

119. "*Syrupus acidi acetosi.* Syrup of vinegar.—"Take of acetic acid, $2\frac{1}{2}$ lb.; refined sugar, $3\frac{1}{2}$ lb. Boil so as to form a syrup." This acidulous syrup being sufficiently pleasant, may enter into mixtures in which it cannot occasion any chemical decomposition.

120. "*Syrupus althææ officinalis.* Syrup of althæa.—"Take of fresh althæa root cut, 1 lb.; water, 10 lb.; refined sugar, 4 lb. Boil the water with the root to one half, and expressing it strongly, strain. Put aside the strained liquor, that the impurities may subside, and to the purified liquor add the sugar; then boil it so as to form a syrup." The quantity of mucilage this syrup can contain is so trifling, that it cannot be considered as receiving from it any virtue.

121. "*Syrupus amomi zingiberis.* Syrup of ginger.—"Take of the root of ginger, beat, 3 oz.; boiling water, 4 lb.; refined sugar, $7\frac{1}{2}$ lb. Macerate the root in the water, in a close vessel, for 24 hours; and, to the strained liquor, add the beat sugar, so as to make a syrup." The flavour of the ginger renders this syrup sufficiently pleasant.

122. "*Syrupus citri aurantii.* Syrup of orange-peel.—"Take of the fresh outer rind of the orange, 6 oz.; boiling water, 3 lb.; refined sugar, 4 lb. Macerate the rind in water for 12 hours; then to the strained liquor add the sugar beat to powder, and, by the application of a gentle heat, form a syrup." This syrup, like the former, is used merely on account of its grateful aromatic flavour.

123. "*Syrupus citri medicæ, olim syrupus lemonum.* Syrup of lemon.—"Take of the juice of lemons strained after the impurities have subsided, 3 parts; refined sugar, 5 parts. Dissolve the sugar so as to form a syrup." This pleasant syrup is used to sweeten and acidulate mixtures, especially those of the mucilaginous kind.

124. "*Syrupus colchici autumnalis.* Syrup of colchicum.—"Take of the fresh root of colchicum, cut into small pieces, 1 oz.; acetic acid, 16 oz.; refined sugar, 26 oz. Macerate the root in the acid for two days, shaking the vessel occasionally; then expressing it gently, strain it; to the strained liquor add the sugar, and boil a little, so as to form a syrup." Colchicum has been used under this form as a diuretic in dropsy. The dose of the syrup is half an ounce or six drachms.

125. "*Syrupus dianthi caryophylli.* Syrup of clove July-flower.—"Take of the fresh petals of the clove July flower freed from the heels, 1 lb.; of boiling water, 4 lb.; of refined sugar, 7 lb. Macerate the petals in the water for 12 hours; then to the strained liquor add the beat sugar; which dissolve with a gentle heat, so as to form a syrup." This syrup is valued principally on account of its deep red colour. Its flavour also is pleasant.

126. "*Syrupus papaveris somniferi.* Syrup of white poppy.—"Take of the dried capsules of the white poppy, freed from the seeds, 2 lb.; boiling water, 30 lb.; refined sugar, 4 lb. Macerate the sliced capsules in the water for 12 hours; then boil until a third part only of the liquor remain, and pressing it strongly, strain; boil down the strained liquor to one half, and again strain: lastly, the sugar being added, boil a little, so as to form a syrup." The capsules possess the narcotic power (see PAPAVER, N° 1.), and the juice is soluble in water, by which it is extracted. The syrup is given as an anodyne to children. The dose to a child a year old is one drachm. The Dublin College have substituted for it a syrup of opium.

127. "*Syrupus rhamni cathartici.* Syrup of buckthorn.—"Take of the clarified juice of ripe buckthorn berries, two parts; refined sugar, one part. Boil so as to form a syrup." This syrup is used as a cathartic; the dose to an adult is 1 oz. or $1\frac{1}{2}$ oz.

128. "*Syrupus rosæ gallicæ.* Syrup of red roses.—"Take of the dried petals of the red rose, 7 oz.; boiling water, 5 lb.; refined sugar, 6 lb. Macerate the petals in water for 12 hours; then boil them a little, and strain; to the strained liquor add the sugar, and again boil, so as to form a syrup."

129. "*Syrupus rosæ centifoliæ.* Syrup of damask or pale rose.—"Take of the fresh petals of the damask rose, 1 lb.; boiling water, 4 lb.; refined sugar, 3 lb. Macerate the petals in water for 12 hours; then to the strained liquor add the sugar, and boil, so as to form a syrup." This syrup is a very mild purgative, and is given to children in a dose of 2 or 3 tea-spoonfuls.

130. "*Syrupus scillæ maritimæ.* Syrup of squill.—"Take of the vinegar of squill, 2 lb.; refined sugar, $3\frac{1}{2}$ lb. Dissolve the sugar with a gentle heat, so as to form a syrup." Dose, one or two drachms.

131. "*Syrupus Toluifera balsami, vulgo syrupus balsamicus.* Syrup of Tolu balsam.—"Take of common syrup, 1 lb.; tincture of Tolu balsam, 1 oz. With the syrup newly prepared, and removed from the fire, when it has nearly cooled, mix the tincture gradually with agitation."

132. "This syrup, according to the formula of the London College, is prepared by boiling the balsam of Tolu in water, and dissolving the sugar in this liquor. Prepared in either way, it can be valued only on account of its flavour.

133. "*Syrupus violæ odoratæ.* Syrup of violets.—"Take of the fresh flowers of the sweet-scented violet, 1 lb.; boiling water, 4 lb.; refined sugar, $7\frac{1}{2}$ lb. Macerate the flowers in water for 24 hours

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hours in a covered glass or earthen vessel. Then strain, without expression, and to the strained liquor, add the beat sugar, so as to form a syrup." This syrup is a very gentle laxative, and as such is given to infants in a dose of one or two teaspoonfuls.

134. "The following syrups have not a place in the Edinburgh Pharmacopœia.

135. "*Syrupus succi fructus mori*. Syrup of mulberry juice.

136. "*Syrupus succi fructus rubi idæi*. Syrup of raspberry juice.

137. "*Syrupus succi fructus ribis nigri*. Syrup of black-currant juice.—The syrups prepared from these fruits, inserted in the London Pharmacopœia, are pleasant and acidulous. Some of them, however, are superfluous.

138. "*Syrupus croci*. Syrup of saffron, *Pharm. Lond.* is admitted on account of its colour, as is also the *Syrupus papaveris erratci*. Syrup of red poppy.

139. "MEDICATED HONEYS differ in little or nothing from syrups, and are therefore rejected from the Edinburgh Pharmacopœia. In the London and Dublin Pharmacopœias, are retained, *Mel acetatum*; *Oxymel colchici*; *Mel rosæ*; *Mel scillæ*; *Oxymel scillæ*; which, as the corresponding syrups have been noticed, it would be superfluous to give at length.

SECT. XI. VINA.—WINES.

140. "WINE, from its composition, and especially from the alcohol and water it contains, is capable of dissolving the active matter of many vegetables. Solutions of this kind are named *Medicated Wines*. They are more liable to decomposition from keeping than tinctures. To obviate this, it is usual to add to them, when prepared, a portion of alcohol.

141. "*Vinum aloes fœcotorinæ, vulgo tinctura fœcota*. Wine of fœcotorine aloes. Sacred Tincture.—"Take of fœcotorine aloes, reduced to powder, one oz.; lesser cardamom seeds, ginger root, of each, beat, one dr.; Spanish white-wine, 2 lb. Digest for 7 days, shaking frequently, and strain." This is a stimulating cathartic, producing its full effect in the dose of one oz. In a dose of 1 or 2 dr. it is given to excite the action of the intestines and neighbouring organs.

142. "*Vinum gentianæ compositum, vulgo vinum Amarum*. Compound gentian wine.—"Take of gentian root, half an oz.; Peruvian bark, 1 oz. orange peel dried, 2 dr.; canella bark, 1 dr.; diluted alcohol, 4 oz.; Spanish white-wine, 2½ lb. On the root and barks bruised, pour first the diluted alcohol; and after 24 hours, add the wine. Then macerate for 7 days, and strain." Its dose is six drachms.

143. "*Vinum ipecacuanbæ*. Ipecacuan wine.—"Take of ipecacuan root bruised, one ounce; Spanish white-wine, 15 oz. Macerate 7 days, and strain through paper. Dose as an emetic, one ounce to an adult.

144. "*Vinum nicotianæ tabaci*. Tobacco wine.—"Take of the leaves of tobacco, 1 oz.; Spanish white-wine, 1 lb. Macerate for 7 days, and strain through paper." Under this form, tobacco has

been used as a diuretic in dropsy. Dose, 30 drops gradually increased to 60 or 80 twice a-day.

145. "*Vinum rhei palmati*. Rhubarb wine.—"Take of the root of rhubarb, cut, 2 oz.; canella bark, 1 dr.; diluted alcohol, 2 oz.; Spanish white-wine, 15 oz. Macerate 7 days, and strain through paper." The dose as a purgative is from half an ounce to an ounce. The tincture of rhubarb is in general to be preferred.

SECT. XII. ACETA.—VINEGARS.

146. "VINEGAR is capable of dissolving several of the principals of vegetables. It frequently, however, alters their powers, or does not coincide with them in virtue. There are, therefore, few medicated vinegars in use.

147. "*Acetum aromaticum*. Aromatic vinegar.—"Take of the dried tops of rosemary; the dried leaves of sage, of each 4 oz.; dried lavender flowers, 2 oz.; cloves, 2 dr.; distilled acetous acid, 8 lb. Macerate 7 days, and strain the expressed liquor through paper." This is chiefly used as a perfume.

148. "*Acidum acetosum camphoratum*. Camphorated acetous acid.—"Take of the stronger acetous acid, 6 oz.; camphor, half an ounce; alcohol, as much as is necessary. Rub the camphor with the alcohol into a powder, which put into the acid, that it may be dissolved." This preparation, snuffed up the nostrils, is a powerful and grateful stimulant, to obviate nausea, or relieve languor.

149. "*Acetum scillæ maritimæ*. Vinegar of squill.—"Take of squill root dried, 2 oz.; distilled acetous acid, 2½ lb.; alcohol, 3 oz. Macerate the squill with the acetous acid for 7 days: express the acid; add the alcohol; and when the impurities have subsided, pour off the liquor."

150. "Vinegar is the proper menstruum of squill; and this preparation possesses all its powers, unimpaired. It is seldom given under this form as a diuretic, but generally as an expectorant. The dose is from one to two drachms.

SECT. XIII. TINCTURA.—TINCTURES.

151. "TINCTURES are solutions of vegetable, animal, and sometimes of mineral substances, in spirituous liquors. The solvent may be either pure alcohol, diluted alcohol, or alcohol impregnated with ammonia or ether. They generally contain the virtues of the substances dissolved, in a concentrated state, though sometimes altered, or lost in those of the menstruum. They are little liable to decomposition, and this gives them a superiority over those preparations in which the solvent power of water is employed.

152. "Alcohol is the solvent of a number of the immediate principles of vegetables; of resin camphor, essential oil, and extract; and hence is capable of extracting the virtues of many important remedies. Tinctures made with it are little general decomposed on the addition of watery liquors.

153. "Diluted alcohol, or PROOF-SPIRIT, is still more general solvent; as the water it contains dissolves several principles which are not soluble

in pure alcohol. It is therefore more generally employed.

154. "Alkohol, impregnated with ammonia or ether, is employed in forming tinctures only of a few substances, whose operations are supposed to be promoted by these agents.

155. "*Tinctura aloes fucatorine*. Tincture of aloes.—"Take of fucatorine aloes in powder, half an ounce; extract of liquorice, 1½ oz.; alcohol, 4 oz.; water, 1 lb. Digest for 7 days with a gentle heat in a closed vessel, shaking the vessel frequently; directions which, with regard to all tinctures, are to be observed."

156. "This is the only tincture in which the proportion of water is superior to that of alcohol. Its dose as a cathartic is one ounce.

157. "*Tinctura aloes etherea*. Ethereal tincture of aloes.—"Take of myrrh, fucatorine aloes, of each 1½ oz.; English saffron, 1 oz.; spirit of sulphuric ether, 1 lb. Digest the myrrh with the spirit for 4 days in a closed phial; then add the saffron and aloes. Digest again for 4 days; and when the impurities have subsided, pour off the tincture."

158. "This is a stimulating purgative, in a dose of one or two drachms.

159. "*Tinctura aloes cum myrrha*. Tincture of aloes and myrrh.—"Take of myrrh powdered, 2 oz.; alcohol, 1½ lb.; water, half a pound. Mix the alcohol with the water; then add the myrrh; digest for 4 days; and lastly, add of fucatorine aloes, 1½ oz.; English saffron, 1 oz. Digest again for 3 days, and pour off the pure tincture." This is used principally externally, as an application to bleeding wounds, and a stimulant to foul ulcers.

160. "*Tinctura amomi repentis*. Tincture of cardamom.—"Take of cardamom seeds, 4 oz.; diluted alcohol, 2½ lb. Digest for two days, and strain through paper." This tincture is used for its moderate aromatic flavour and pungency.

161. A compound tincture of cardamom, in which caraway, cinnamon, and raisins, are introduced, is likewise inserted in the London Pharmacopœia, and is used for the same purpose.

162. "*Tinctura arifolœbie serpentarie*. Tincture of snake-root.—"Take of Virginian snake-root, two ounces; cochineal, one drachm; diluted alcohol, two pounds and a half. Digest for 7 days, and strain through paper."

163. "Serpentaria is seldom exhibited under the form of tincture. As a grateful bitter, it may be given occasionally in dyspepsia in a dose of two drachms.

164. "*Tinctura assafoetida*. Tincture of assafoetida.—"Take of assafoetida, 4 oz.; alcohol, 2½ lb. Digest for 7 days, and strain through paper." This is a remedy in hysteria, it is sometimes given in a dose of one drachm.

165. "*Tinctura benzoei composita, vulgo balsamum traumaticum*. Compound tincture of benzoin.—"Take of benzoin, 3 oz.; balsam of Peru, 2 oz.; hepatic aloes, half an ounce; alcohol, 2 lb. Digest for 7 days, and strain through paper." This is used only externally, and principally as an application to recent superficial wounds.

166. "*Tinctura camphoræ; vulgo spiritus vinosus camphoratus*. Tincture of camphor.—"Take of camphor, one ounce; alcohol, 1 lb. Mix; so as to dissolve the camphor. It may be also made with a double or triple proportion of camphor.—This solution is used externally as a stimulant and anodyne application in chronic rheumatism, bruises and strains. It is applied by friction to the part.

167. "*Linimentum camphoræ compositum*. Lond.—"Take of camphor two ounces; water of ammonia, 6 oz.; spirit of lavender, 16 oz. Mix the water of ammonia with the spirit, and distil 16 oz. from a glass retort with a gentle heat. Dissolve the camphor in the distilled liquor." This liniment is applied to the same uses as the preceding. From the addition of the ammonia it is more powerful as a stimulant.

168. "*Tinctura cassiæ fennæ composita, olim elixir salutis*. Tincture of fenna.—"Take of the leaves of fenna, 2 oz.; root of Jalap, one oz.; coriander seeds, half an ounce; diluted alcohol, 3½ lb. Digest for 7 days, and to the tincture strained through paper, add 4 oz. of refined sugar." This tincture is in very common use as a purgative. Its dose is one ounce, or 1½ oz.

169. "*Tinctura castorei*. Tincture of Castor.—"Take of Russian castor, one ounce and a half; alcohol, one pound. Digest for 7 days, and strain through paper."

170. "In the London, and likewise in the Dublin Pharmacopœia, this tincture is ordered to be prepared with diluted alcohol; but with pure alcohol it is more grateful. It is a feeble remedy, given sometimes as an antispasmodic, in a dose of from half a drachm to a drachm.

171. "*Tinctura castorei composita*. Compound tincture of castor.—"Take of Russian castor, one ounce; assafoetida, half an ounce; ammoniated alcohol, one lb. Digest for 7 days, and strain through paper." This tincture is more active than the former; it is given in a similar dose.

172. "*Tinctura cinchonæ officinalis*. Tincture of Peruvian bark.—"Take of Peruvian bark in powder, 4 oz.; diluted alcohol, 2½ lb. Digest for 7 days, and strain through paper." This is used in dyspepsia, occasionally, in a dose of two drachms.

173. "*Tinctura cinchonæ, vulgo Corticis Peruviani, composita*. Compound tincture of Peruvian bark. Lond.—"Take of Peruvian bark in powder, 2 oz.; dried orange peel, 1½ oz.; Virginian snake-root, 3 dr.; saffron, 1 dr.; cochineal in powder, two scruples; proof-spirit, 20 oz. Digest for 14 days, and strain." This has been long known under the name of *Huxham's Tincture of Bark*. It is more grateful than the simple tincture, and is used like it in dyspeptic affections, in a dose of 2 or 3 drachms.

174. "*Tinctura cinchonæ, vulgo corticis Peruviani, ammoniata*. Lond. Ammoniated tincture of bark.—"Take of Peruvian bark in powder, 4 oz.; compound spirit of ammonia, 2 lb. Digest in a closed vessel for 10 days, and strain."

175. "*Tinctura columbæ*. Tincture of Colombo.—"Take of the root of Colombo in powder, 2 oz.; diluted alcohol, 2 lb. Digest for 7 days, and

and strain through paper." This is used merely as a bitter tincture in dyspepsia, in a dose of 3 or 4 drachms.

176. "*Tinctura convolvuli jalapae*. Tincture of jalap.—"Take of the root of jalap in powder, 3 oz.; diluted alkohol, 15 oz. Digest for 7 days, and strain through paper." The tincture may be given as a cathartic, in a dose of 4 or 6 drachms.

177. "*Tinctura croci*. Tincture of saffron.—"Take of English saffron, 1 oz.; diluted alkohol, 15 oz. Digest for 7 days, and strain through paper."

178. "*Tinctura digitalis purpureae*. Tincture of foxglove.—"Take of the dried leaves of foxglove, one ounce; diluted alkohol, 8 oz. Digest for 7 days, and strain through paper."

179. "*Tinctura gentianae composita*, vulgo *Elixir Stomachicum*. Compound tincture of gentian.—"Take of gentian root, 2 oz.; dried orange peel, 1 oz.; canella bark, half an ounce; cochineal, half a drachm; diluted alkohol, 2½ lb. Digest for 7 days, and strain through paper." This tincture is employed in dyspepsia, in a dose of 2 or 3 dr. given occasionally.

180. "*Tinctura guajaci*. Tincture of guaiac.—"Take of the resin of guaiac, 1 lb.; alkohol, 2½ lb. Digest for 7 days, and strain through paper." This tincture is given in a dose of 2 or 3 dr.

181. "*Tinctura guajaci ammoniata*. Ammoniated tincture of guaiac.—"Take of the resin of guaiac, 4 oz.; ammoniated alkohol, 1½ lb. Digest for 7 days, and strain through paper." It is given in chronic rheumatism, in a dose from 1 to 2 dr.

182. "*Tinctura hellebori nigri*. Tincture of black hellebore.—"Take of black hellebore root, 4 oz.; cochineal, half a drachm; diluted alkohol, two pounds and a half. Digest for 7 days, and strain through paper." This tincture has been used as an emmenagogue, in a dose of one drachm.

183. "*Tinctura hyoscyami nigri*. Tincture of black henbane.—"Take of the dried leaves of black henbane, one ounce; diluted alkohol, eight ounces. Digest for 7 days, and strain through paper."

184. "*Tinctura kino*. Tincture of kino.—"Take of kino, two ounces; diluted alkohol, one pound and a half." The dose is from half a drachm to a drachm.

185. "*Tinctura lauri cinnamoni*. Tincture of cinnamon.—"Take of cinnamon bark, three ounces; diluted alkohol, two pounds and a half. Digest for 7 days, and strain through paper."

186. "*Tinctura lauri cinnamoni composita*, olim *Tinctura aromatica*. Compound tincture of cinnamon.—"Take of the bark of cinnamon, cardamom seeds, of each one ounce; long pepper, two drachms; diluted alkohol, two pounds and a half. Digest for 7 days, and strain through paper."

187. "*Tinctura melos vesicatorii*, vulgo *Tinctura cantharidum*. Tincture of cantharides.—"Take of cantharides, one drachm; diluted alkohol, one pound. Digest for 7 days, and strain through paper." This tincture is used principally externally as a rubefacient; as an internal re-

medy, the dose in which it has been given is 15 drops.

188. "*Tinctura mimosae catechu*; olim *tinctura japonica*. Tincture of catechu.—"Take of catechu, three ounces; bark of cinnamon, two ounces; diluted alkohol, two pounds and a half. Digest for 7 days, and strain through paper;" This solution is given in a dose of one drachm.

189. "*Tinctura myrrinae*. Tincture of myrrh.—"Take of myrrh in powder, three ounces; alkohol, twenty ounces; water, ten ounces. Digest for ten days, and strain through paper. The tincture is used principally as an external stimulant and antiseptic application."

190. "*Tinctura opii, sive thebaica*; vulgo, *laudanum liquidum*. Tincture of opium.—"Take of opium, two ounces; diluted alkohol, two pounds. Digest for 7 days, and strain through paper." This tincture is the usual form under which opium is administered. The usual dose is twenty-five drops.

191. "*Tinctura opii ammoniata*; olim *elixir paregoricum*. Ammoniated tincture of opium.—"Take of benzoic acid, English saffron, of each three drachms; opium, two drachms; volatile oil of anise, half a drachm; ammoniated alkohol, sixteen ounces. Digest for 7 days in a shut phial, and strain through paper." Its dose is from half a drachm to a drachm, in catarrhal affections.

192. "*Tinctura opii camphorata*. Lond.—"Take of hard purified opium reduced to powder, flowers of benzoin, of each one drachm; camphor, two scruples; oil of anise, one drachm; proof-spirit, two pounds by measure. Digest for ten days, and strain." This tincture is known like the preceding one, by the name of *Paregoric elixir*. Its dose is 2 or 3 dr.

193. "*Tinctura rhei palmati*. Tincture of rhubarb.—"Take of the root of rhubarb, three ounces; lesser cardamom seeds, half an ounce; diluted alkohol, two pounds and a half. Digest for 7 days, and strain through paper." This tincture contains all the virtues of rhubarb. Its dose is from half an ounce to an ounce.

194. "*Tinctura rhei cum aloë*; olim *elixir sacrum*. Tincture of rhubarb with aloes.—"Take of the root of rhubarb, ten drachms; socotorine aloes, six drachms; lesser cardamom seeds, half an ounce; diluted alkohol, two pounds and a half. Digest for 7 days, and strain through paper." This is frequently employed as a stimulating cathartic, in a dose of six drachms, or an ounce.

195. "*Tinctura rhei cum gentiana*; olim *tinctura rhei amara*. Tincture of rhubarb with gentian.—"Take of root of rhubarb, two ounces; gentian root, half an ounce; diluted alkohol, two pounds and a half. Digest for 7 days, and strain through paper." The dose is from 2 to 4 drachms, chiefly used in dyspeptic cases.

196. "*Tinctura rhei composita*. Lond. Compound tincture of rhubarb.—"Take of rhubarb cut, two ounces; liquorice bruised, half an ounce; ginger in powder, saffron, of each two drachms; distilled water, one pound; proof-spirit, twelve ounces. Digest for 14 days, and strain."

197. "*Tinctura saponis*, vulgo *linimentum saponaceum*."

naceum. Tincture of soap.—“Take of soap, four ounces; camphor, two ounces; volatile oil of rosemary, half an ounce; alcohol, two pounds. Digest the soap in the alcohol for 3 days; then add the camphor and oil to the strained liquor, agitating it.” This is a powerful stimulant used as an external application in strains and rheumatic pains.

198. “*Tinctura saponis cum opio; olim linimentum anodynum*. Tincture of soap with opium.—“This is made in the same manner, and from the same ingredients, as the tincture of soap; only adding at first one ounce of opium.” It is used for the same purposes as the preceding tincture, but is a more powerful anodyne.

199. “*Tinctura Toluiferæ balsami; olim tinctura Tolutana*. Tincture of Tolu balsam.—“Take of balsam of Tolu, one ounce and a half; alcohol, one pound. Digest until the balsam is dissolved, and strain through paper.” This tincture is scarcely used but on account of its flavour, and for making the syrup of Tolu.

200. “*Tinctura verati albi*. Tincture of white hellebore.—“Take of white hellebore root, eight ounces; diluted alcohol, two pounds and a half. Digest for 7 days, and strain through paper.” The dose of this tincture cannot exceed a few drops; but it is so violent, it is seldom or never given internally.

201. “The following are the tinctures peculiar to the *London Pharmacopæia*. In each of them the pound is by measure, or is equivalent to a pint.

202. “*Tinctura aurantii corticis*. Tincture of orange peel.—“Take of fresh orange peel, three ounces; proof-spirit, two pounds. Digest for 3 days, and strain.

203. “*Tinctura balsami Peruviani*. Tincture of Peruvian balsam.—“Take of Peruvian balsam, four ounces; rectified spirit of wine, one pound. Digest until the balsam is dissolved.”

204. “*Tinctura cascariellæ*. Tincture of cascarrilla.—“Take of cascarrilla in powder, four ounces; proof-spirit, two pounds. Digest with a gentle heat for 8 days, and strain.” It is seldom used.

205. “*Tinctura galbani*. Tincture of Galbanum.—“Take of galbanum cut into small pieces, two ounces; proof-spirit, two pounds. Digest with a gentle heat for 8 days, and strain.” Tincture of galbanum has been used in hysteria, flatulence and asthma, in a dose of from one to three drachms.

206. “*Tinctura fabinæ composita*. Compound tincture of favin.—“Take of extract of favin, one ounce; tincture of castor, one pound; tincture of myrrh, half a pound. Digest until the extract of favin is dissolved, and strain.” This tincture has been recommended as an emmenagogue, in a dose of half a drachm twice a-day.

207. “*Tinctura scillac*. Tincture of squill.—“Take of squill recently dried, four ounces; proof-spirit two pounds. Digest for 8 days, and pour off the liquor.” Vinegar is generally used as the menstruum. This tincture may be given in a dose of from 20 to 60 drops.

208. “*Tinctura valerianæ*. Tincture of valerian.—“Take of wild valerian in coarse powder,

four ounces; proof-spirit, two pounds. Digest with a gentle heat for 8 days and strain.”

209. *Tinctura valerianæ ammoniata*. Ammoniated tincture of valerian.—“Take of wild valerian in coarse powder, four ounces; compound spirit of ammonia, two pounds. Digest for 8 days and strain.” Of these two tinctures, the latter is the more powerful, and is a remedy often employed in hyteric affections. Its dose is from one to two drachms.

210. “*Tinctura zingiberis*. Tincture of ginger.—“Take of ginger in powder, two ounces; proof-spirit, two pounds. Digest with a gentle heat for 8 days, and strain.” This tincture may be used as an aromatic in combination with other remedies.

SECT. XIV. EXTRACTA.—EXTRACTS.

211. An EXTRACT is the concrete tenacious mass obtained by evaporation of the solvent, when vegetable matter is dissolved in water or alcohol. When prepared from an aqueous solution, it is named a *watery*, when from one in alcohol pure or diluted, a *spirituous extract*. The former must consist chiefly of those proximate principles which water can easily dissolve; mucilage, tannin, extractive, and saline matter: the latter of a portion of these with resin. In either preparation, the volatile principles must necessarily be dissipated; and in many cases, especially in the preparation of the watery extracts, decomposition or oxygenation of the more fixed parts take place. Hence there are few vegetables whose virtues are obtained uninjured in their extracts.

I. EXTRACTA PER AQUAM. EXTRACTS BY WATER.

212. The directions for preparing these are given in the Edinburgh Pharmacopæia, under the Extract of Gentian.

213. *Extractum Gentianæ luteæ*. Extract of Gentian.—“Take of gentian root, any quantity. Having cut and bruised it, add 8 times its weight of distilled water. Boil to one half, and strain, expressing the liquor strongly. Reduce it immediately to the consistence of thick honey, by evaporation in a bath of boiling water, saturated with muriat of soda.” It is intensely bitter. In the same manner are prepared the following extracts.

214. *Extractum Radicis glycyrrhizæ Glabrae*. Extract of liquorice root.—It consists chiefly of mucilage and saccharine matter, and is used in catarrh. When the common extract is purified by solution in water, straining and evaporation, it is named *refined liquorice*.

215. *Extractum Radicis hellebori nigri*. Extract of black hellebore root.—The spirituous extract of this root is extremely violent in its operation. The aqueous which is received in the Edinburgh Pharmacopæia is comparatively mild. Its dose is from 10 to 20 grains.

216. *Extractum foliorum rutæ graveolentis*. Extract of rue.—As the virtues of rue reside chiefly, if not entirely, in its essential oil, this extract received in both Pharmacopæias must be regarded as an injudicious preparation.

217. *Extractum foliorum cassiæ sennæ*. Extract of senna.—Senna has its activity much impaired by

by decoction. The extract, therefore, cannot be regarded as a proper preparation of it.

218. *Extractum florum antbemidis nobilis*. Extract of chamomile.—The unpleasant flavour of chamomile is entirely dissipated by decoction. The extract is a pure bitter.

219. "*Extractum capium papaveris somniferi*. Extract of poppy. This extract from the capsule retains its narcotic quality, but its strength is not uniform.

220. "*Extractum ligni baumatoxyli campechiani*. Extract of logwood.—In this extract, the astringency is obtained entire. The dose is from 10 to 20 grains.

221. "The watery extracts in the London Pharmacopœia are the same with those in the Edinburgh, with the addition of Extract of Broom, of favin, and of Peruvian bark.

222. "*Extractum cacuminis geniffae*. Extract of broom tops.—An infusion of broom tops has been used as a diuretic; but the extract can scarcely be considered as possessing any power.

223. "*Extractum fabinae*. Extract of favin.—This is liable to the same objection as the extract of rue; that its virtues residing in its essential oil must be dissipated in the process.

224. "*Extractum cinchonae, vulgo Corticis Peruviani*. Extract of Peruvian bark.—"Take of Peruvian bark, in coarse powder, 1 lb.; distilled water, 12 lb. Boil for an hour or two, and pour off the liquor, which, while hot, will be red and pellucid; but as it cools, becomes yellow and turbid. Pour on again the same quantity of water; boil as formerly; and repeat the boiling, until the liquor, when cold, remains limpid. Then reduce all these liquors, mixed together and strained, to a proper consistence, by evaporation.

225. "This extract ought to be prepared under two forms; one *soft*, fit to form pills; the other *hard*, so that it may be reduced to powder." The active matter of bark is resinous, which boiling water dissolves, but operates a chemical change, by which change its effect is diminished. Its medium dose is 10 grains. See PERUVIAN BARK.

II. EXTRACTA PER AQUAM ET ALKOHOL. EXTRACTS BY WATER AND ALKOHOL.

226. "*Extractum cinchonae officinalis*. Extract of Peruvian bark.—"Take Peruvian bark in powder 1 lb.; alcohol, 4 lb. Digest for 4 days, and pour off the tincture. Boil the residuum in 5 lb. of distilled water for 15 min. and strain the decoction while hot through linen. Repeat this boiling and straining with an equal quantity of distilled water, and reduce the liquor by evaporation to the consistence of thin honey. Draw off the alcohol from the tincture by distillation, until it is reduced to a similar consistence. Then mix the liquors thus inspissated, and reduce to a proper consistence by a bath of boiling water, saturated with muriat of foda."

227. "This preparation is undoubtedly preferable to the watery extract of bark. The dose is 10 grains.

228. "*Extractum radidis convolvuli jalapae*. Extract of jalap.—This is ordered to be prepared in the same manner as the extract of bark. It is a

cathartic capable of operating fully in a dose of 10 or 12 grains.

229. "Besides these two, there are some other spirituous extracts in the London Pharmacopœia.

230. "*Extractum cascarillae*. Extract of cascarilla.—It may be regarded as bitter and tonic. Its dose is one scruple or half a drachm.

231. "*Extractum colocynthidis compositum*. Compound extract of colocynth.—"Take the pith of colocynth cut small, 6 drachms; fœcutorine aloes in powder, 1½ oz.; scammony in powder, half an ounce; lesser cardamom seeds freed from the husks, powdered, one drachm; proof spirit, 12 lb. Digest the colocynth in the spirit with a gentle heat for 4 days. To the expressed tincture add the aloes and scammony. These being dissolved, draw off the spirit by distillation; then evaporate the water, adding the seeds towards the end of the evaporation. Make an extract fit for forming pills."

232. "This composition, formerly known by the name of *cathartic extract*, is a cathartic of much power, sometimes employed in obstinate constipation. Its dose is from 5 to 20 grains.

233. "*Opium purificatum*. Purified opium.—"Take of opium cut into small pieces, 1 lb.; proof spirit, 12 lb. Digest with a gentle heat; agitating frequently until the opium is dissolved; strain the tincture through paper, and distil it thus prepared to a proper consistence. Purified opium ought to be kept under two forms; soft, so as to be fit to form pills; and hard, so as to be capable of being reduced to powder."

234. "A process similar to this had a place in the Edinburgh Pharmacopœia, but has properly been expunged.

SECT. XV. AQUÆ STILLATIÆ. DISTILLED WATERS.

235. "In most instances the water distilled from vegetable substances, is impregnated with their flavour and taste. This is owing to their essential oil being volatilized at the temperature at which water boils, and being dissolved in small proportion by the water condensed. It is very seldom that any important virtue of vegetables resides in that principle, and hence the different distilled waters are more used as vehicles of other remedies, than as being themselves active medicines. It is evident that it is only those vegetables which contain a sensible quantity of essential oil, that can be subjected with advantage to this process, and that any quality residing in the other principles of the vegetable will not be obtained in the distilled water. To preserve the distilled waters from decomposition, to which they are liable, from the small quantity of vegetable matter they contain, a proportion of alcohol, about one fiftieth of their weight, may be added to them; and they require to be kept secluded from the air.

236. "*Aqua distillata*. Distilled water.—"Distil water in clean vessels until about two thirds have come over." By distillation a perfectly pure water is obtained, which is not found in nature.

237. "*Aqua corticis citri aurantii*. Water of orange peel.—"Take of orange peel, 2 lb. Pour

or

on these as much water, that when 10 lb. shall have been drawn off by distillation, a quantity shall remain sufficient to prevent empyreuma. After due maceration distil 10 lb.

238. 'In the same manner are prepared the following; which require no particular observations, since they possess merely the odour, and some of them the taste and pungency of the vegetables from which they are prepared: 10 lb. of water are to be drawn by distillation from the quantities annexed to each:

239. '*Aqua corticis fructus citri medicæ recentis*. Fresh lemon peel, 2 lb.

240. '*Aqua corticis lauri cassiæ*. Bark of Cassia, 1 lb.

241. '*Aqua corticis lauri cinnamomi*. Bark of cinnamon, 1 lb.

242. '*Aqua menthæ piperitæ florentis*. Fresh peppermint, 3 lb.

243. '*Aqua menthæ pulegii florentis*. Fresh pennyroyal, 3 lb.

244. '*Aqua fructus myrti pimentæ*. Pimento, half a pound.

245. '*Aqua petalorum rosæ centifoliæ recentium*. Fresh petals of the rose, 6 lb.

246. 'In the London Pharmacopœia are likewise inserted,

247. '*Aqua anethi*. Dill-seed water.

248. '*Aqua fœniculi*. Fennel-seed water.

249. '*Aqua menthæ sativæ*. Spearmint water.

SECT. XVI. 'SPIRITUS STILLATITII. DISTILLED SPIRITS.

250. 'THE distillation of pure alkohol or diluted alkohol from vegetable substances gives these. Alkohol in its pure state seldom receives any sensible impregnation; because, although it is capable of dissolving the essential oils of plants, there are very few of them which it can bring over in distillation; a higher temperature being necessary to volatilize them than the alkohol. But by employing diluted alkohol, a liquor is obtained more odorous and pungent. When heated with the vegetable, the alkohol first distils over, and afterwards the water with the essential oil, and the whole, when condensed, forms a transparent fluid. These distilled spirits, like the distilled waters, are in general mere agreeable vehicles for the exhibition of other medicines, or grateful stimulants, sometimes used to relieve nausea or flatulence. The directions for preparing them are given in the Pharmacopœia, under the spirit of caraway.'

251. '*Spiritus cari carvi*. Spirit of caraway. —'Take of caraway seeds, half a pound. Pour on of diluted alkohol, 9 lb. Macerate during two days in a close vessel; then add a sufficient quantity of water to prevent empyreuma, and draw off 9 lb. by distillation.

252. 'In the same manner are prepared the following spirits, 9 lb. being drawn from the quantities affixed to each:

253. '*Spiritus corticis lauris cinnamomi*. Bark of cinnamon, 1 lb.

254. '*Spiritus menthæ piperitæ florentis*. Herb of peppermint, 1½ lb.

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255. '*Spiritus nucis myristicæ moschatæ*. Nutmeg, 2 oz.

256. '*Spiritus fructus myrti pimentæ*. Fruit of pimento, half a pound.

257. 'To these may be added from the London Pharmacopœia,

258. '*Spiritus menthæ sativæ*. Spirit of spearmint.

259. '*Spiritus pulegii*. Spirit of pennyroyal.'

260. 'Of compound spirits, the following have a place in the Pharmacopœias:

261. '*Spiritus juniperi communis compositus*. Compound spirit of juniper. Pharm. Ed.

262. 'Take of juniper berries bruised, one pound; caraway seeds, fennel seeds, of each one ounce and a half; diluted alkohol, nine pounds. Macerate for two days; and, adding as much water as is sufficient to prevent empyreuma, draw off nine pounds by distillation.' This has been used as a carminative and diuretic.

263. '*Spiritus anisi compositus*. Compound spirit of anise. Pharm. Lond.—'Take of anise seeds, angelica seeds, of each bruised half a pound; proof-spirit, one gallon; water as much as is sufficient to prevent empyreuma. Distil one gallon.' It is used also as a carminative.

264. '*Spiritus rapbani compositus*. Spirit of horse-radish. Pharm. Lond.—'Take of horse-radish root, dried orange peel, of each 2 lb.; fresh garden scurvy-grass, 4 lb.; nutmegs bruised, 1 oz.; proof-spirit, two gallons; water, as much as is sufficient to prevent empyreuma. Distil two gallons.' This was at one time recommended as an antiscorbutic. It has justly fallen into disuse.

265. 'There remain, lastly, those distilled spirits prepared with pure alkohol.

266. '*Spiritus lavendulæ spicæ*. Spirit of lavender.—'Take of fresh lavender flowers, 2 lb. alkohol, 8 lb. Draw off 7 lb. by distillation in a water-bath.'

267. '*Spiritus lavendulæ spicæ compositus*. Compound spirit of lavender.—'Take of spirit of lavender, 3 lb.; spirit of rosemary, 1 lb.; cinnamon bark, 1 oz.; cloves, 2 dr.; nutmeg, half an ounce; red Saunders wood, 3 dr.; macerate 7 days, and strain.' The dose is 30 or 40 drops.

268. '*Spiritus rosæmarini officinalis*. Spirit of rosemary.—'Take of fresh rosemary tops, 2 lb. alkohol, 8 lb. Draw off 7 lb. by distillation in a water-bath.'

269. '*Alkohol*. There is no process in the Edinburgh Pharmacopœia for the preparation of alkohol. The following is given by the London College:—'Take of rectified spirit of wine, one gallon; prepared kali (sub-carbonate of pot-ash) hot, one pound and a half; pure kali (pot-ash) one ounce. Mix the vinous spirit with the pure kali, and then add one pound of the prepared kali, while hot. Agitate and digest for 24 hours. Pour off the spirit; add to it the remainder of the prepared kali, and distil from a water bath. Preserve the alkohol in a vessel well stoped. The prepared kali ought to be heated to 300°. The specific gravity of alkohol is to that of distilled water as 815 to 1000.'

270. 'The rectified spirit of wine, employed in this process, is prepared by distillation from the

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spirituous

spirituous liquors of commerce. It consists of alcohol with a portion of water. The pot-ash employed in the present process, abstracts the greater part of this water by the strong attraction it exerts to it; and by a careful distillation, the alcohol is obtained, if not entirely, at least nearly pure.

271. 'The specific gravity required in the alcohol, employed in the processes of the Edinburgh Pharmacopœia, is only 835; and though at that standard it must contain a portion of water, it is sufficiently strong for all pharmaceutical purposes.'

SECT. XVII. OLEA VOLATILIA, olim OLEA STILLATITIA vel ESSENTIALIA. VOLATILE OILS, DISTILLED or ESSENTIAL OILS.

272. 'ESSENTIAL OILS differ somewhat in their sensible qualities, but all of them are highly odorous and pungent; and, as medicines, they possess a stimulating power. They are generally employed as corrigents, to improve the flavour and taste of the medicines with which they are mixed, to obviate any unpleasant symptoms they may be apt to produce. As these oils frequently exist in distinct vehicles in the vegetable, some of them may be obtained by expression; but, in general, they are procured by distillation. The rules given in the Edinburgh Pharmacopœia are the following:

273. 'These oils are to be prepared in the same manner as the distilled waters, except that a smaller quantity of water is to be added. Seeds and roots are to be previously bruised or rasped. The oil accompanies the water, and is afterwards separated from it, according as it is lighter or heavier, by swimming on the surface or falling to the bottom. With regard to the preparation of these distilled waters and oils, from the goodness of the substances, their texture, the season of the year, and similar circumstances, so many differences arise, that it is scarcely possible to give any certain and general rules which shall apply strictly to every example. Many things therefore are omitted, to be regulated according to the judgment of the operator, the most general precepts only being delivered.'

274. 'The qualities of these oils are considerably varied by a number of circumstances, more especially by climate, soil, and season. They are likewise injured by too long keeping. Being high priced, they are also frequently adulterated by dilution with alcohol, by the addition of an expressed oil, or by intermixture with each other, the cheaper being used to adulterate the more valuable. The first is detected by the milkiness produced and continuing for some time, on dropping the adulterated oil on water; the second, by the sophisticated oil leaving a permanent greasy spot on paper; and the third may, in general, be discovered by the smell of the coarser oil, rendering it more ardent if necessary, by the application of a gentle heat.

275. 'It is not necessary to notice particularly the different essential oils, as they possess merely the aromatic quality of the vegetables from which they are prepared. The following are those inserted in the Edinburgh Pharmacopœia:

276. '*Oleum herbar menthae, pipéritae florentis.* Oil of peppermint.

277. '*Oleum herbar juniperi sabinae.* Oil of savine.

278. '*Oleum summitatum florentium rosifmarini officinalis.* Oil of rosemary.

279. '*Oleum spicarum florentium lavendulae spicae.* Oil of lavender.

280. '*Oleum seminum pimpinellae anisi.* Oil of anise.

281. '*Oleum baccarum juniperi communis.* Oil of juniper.

282. '*Oleum radices lauri sassafras.* Oil of sassafras.

283. '*Oleum fructus myrti pimentae.* Oil of pimento.

284. 'The London College have also ordered, *Oleum essentialis carvi.* Oil of caraway:

285. '*Oleum menthae sativae.* Oil of spearmint.

286. '*Oleum origani.* Oil of wild thyme.

287. '*Oleum pulegii.* Oil of pennyroyal.

288. '*Oleum succini et acidum succini.* Oil and acid of amber.—'Take of amber in powder, pure sand, equal parts. Put them mixed into a glass retort, of which they shall fill one-half. Having adapted a large receiver, distil from a sand-bath, with a fire gradually raised. First, a watery liquor with a little of a yellow oil, will distil; then a yellow oil with an acid salt; afterwards, a reddish and black oil. Pour the liquor out of the receiver, and let the oil be separated from the water. Let the acid salt, collected from the neck of the retort, and the sides of the receiver, be pressed between folds of bibulous paper, and freed from the adhering oil. Then purify it by solution in hot water and crystallization.'

289. 'Amber is a bitumen which suffers decomposition by heat. The acid which it affords is one *sui generis*; the oil approaches in its properties to the other empyreumatic oils. The acid is never used in medicine; the oil is sometimes employed externally as a stimulant, and internally as an antispasmodic, but is also falling into disuse. A process is ordered in the Pharmacopœia for its purification.

290. '*Oleum succini purissimum.* Purified oil of amber.—'Distil oil of amber mixed with six times its quantity of water, from a glass retort, until two thirds of the water have passed into the receiver. Then separate this purified volatile oil from the water, and keep it in vessels well stop'd.' The oil thus purified, is at first nearly colourless, but gradually acquires a brown tinge. Its odour is extremely unpleasant, its taste acrid. Its dose as an antispasmodic is ten drops.

291. '*Oleum terebinthinae volatile purissimum.* Rectified oil of turpentine.—'Take of volatile oil of turpentine, 1 lb.; water, 4 lb.; distil as long as any oil comes over.' This process seems unnecessary, as distilled oil of turpentine is in general pure enough.

292. 'Two other empyreumatic oils are inserted in the London Pharmacopœia.

293. '*Oleum animale.* Animal oil.—'Take of oil of hartshorn, 1 lb. Distil three times.' The oil is formed by the decomposition of bones by heat. It was once celebrated for its antispasmodic power, but has long been little used.

294. '*Oleum petrolei.* Oil of petroleum, or mineral

neral tar.—“Distil petroleum in a sand-bath.” This has been used principally as an external stimulating application.

SECT. XVIII. OLEOSA.—OILY PREPARATIONS.

295. “*Oleum ammoniatum, vulgo Linimentum Volatile*. Ammoniated oil, commonly called volatile liniment.—“Take of olive oil, 2 oz.; water of ammonia, two drachms. Mix them.”

296. “A much stronger preparation is ordered in the London Pharmacopœia. *Linimentum ammoniac fortius*, consisting of water of pure ammonia, one ounce; olive oil, 2 oz. Another is inserted under the title *Linimentum ammoniac*, composed of water of ammonia, (or rather carbonat of ammonia,) half an oz.; olive oil, an ounce and a half, which, both from the nature and proportion of its ingredients, is milder. They are all used as rubefacients; and, for this purpose, the liniment of the Edinburgh College seems best adapted.

297. “*Oleum lini cum calce*. Linseed oil with lime.—“Take of linseed oil, lime water, of each equal parts. Mix them.” This is used as an application to burns.

298. “*Oleum camphoratum*. Camphorated oil,—“Take of olive oil, 2 ounce; camphor, half an ounce. Mix them, so as that the camphor may be dissolved.” This is a form under which camphor is frequently applied externally as a stimulant and anodyne.

299. “*Oleum sulphuratum*. Sulphurated oil.—“Take of olive oil, 8 ounce; sublimed sulphur, 1 ounce. Boil with a gentle fire, in a large iron pot, stirring constantly until they unite.” This solution of sulphur in oil was once recommended as an expectorant, in a dose of twenty or thirty drops, and was used in asthma and phthisis, but is now altogether discarded from practice.

300. “In the London Pharmacopœia, there is also ordered to be prepared in the same manner, a solution of oil in petroleum, *PETROLEUM SULPHURATUM*. Its qualities are the same.

SECT. XIX. SALES et SALINA.—SALTS and SALINE SUBSTANCES.

301. “To give a precise definition of the term *Salt* is difficult. It was formerly supposed to denote a body eminently sapid, soluble in water, crystallizable, fusible, and unflammable. But these properties are not possessed by many bodies supposed to belong to the class of salts, and they belong to others, which are arranged under other classes of chemical agents.

302. “The definition of salts, in the language of modern chemistry, seems rather to be taken from their composition than from their properties. It is thus understood to be applied to the substances known by the name of *acids*, to those entitled *alkalies*, and to all the compounds formed by the combinations of *acids* with *alkalies*, earths, and metallic oxyds. The acids and alkalies are termed Primary, the other Secondary or neutral salts.” For the general chemical quantities of the acids, alkalies, and neutral salts, and there new nomenclature, see CHEMISTRY, *Index*. The first saline combinations in the Pharmacopœia are those of the acids.

303. “*Acidum acetosum distillatum*. Distilled

acetous acid.—“Distil 8 lb. of acetous acid in glass vessels, with a gentle fire. The two pounds that first come over are to be rejected as too watery; the 4 lb. which follow are the distilled acetous acid. The residuum affords a still stronger acid, but too much burnt.”

304. “Vinegar, as it is produced by fermentation, consists of acetous acid, largely diluted with water, and mixed with a number of other substances,—tartarous acid, extractive, mucilaginous, and saccharine matter. From these it is purified by distillation, but it is still largely diluted with water, as the pure acid is not even so volatile as water; and, in general, it receives from the distillation somewhat of an empyreumatic odour. The process should be conducted in glass vessels, as directed in the Pharmacopœia; as, from metallic ones, the acid would receive an impregnation that might prove noxious. Distilled acetous acid is chiefly employed as a solvent of some vegetable substances, and in making some of the salts.

305. “*Acidum acetosum forte*. Strong acetous acid.—“Take of dried sulphat of iron, 1 pound; acetite of lead, 10 oz. Rub them together. Put them into a retort, and distil from sand with a moderate fire, as long as any acid comes over.”

306. “*Acidum acetosum*. Acetous acid. Pharm. Lond.—“Take of verdigris, in coarse powder, two pounds. Dry it perfectly in a bath of water, saturated with sea salt. Then distil in a sand-bath, and distil the liquor a second time. Its specific gravity is, to that of distilled water, as 1050 to 1000.”

307. “These two processes furnish a powerful acid; but the result of chemical researches on this subject is such, that it is uncertain whether these two concentrated acids differ essentially from each other, and whether they differ except in strength from the diluted acetous acid.

308. “In the first process, that of the Edinburgh Pharmacopœia, the sulphuric acid of the dried sulphat of iron combines with the oxyd of lead of the acetite of lead, and disengages the acetous acid, which, with a portion of water of crystallization, distils over. Its odour is pungent, its taste acrid, and its acid powers considerable. It seems most probable that it is merely the concentrated acetous acid.

309. “In the 2d process, the acid contained in the verdigris is expelled by the action of the heat from the oxyd of copper, with which in that substance it is combined. But it has been generally supposed, that at the same time it suffers a chemical change. According to a former opinion, it receives a portion of oxygen from the oxyd of copper. The experiments of Chaptal appeared afterwards to prove, that it was rather deprived of a portion of its carbon, which remained mixed or united with the oxyd of copper; while Adet, and still more lately Darraq, have concluded from experiments, that no difference exists between these acids but in strength, the acetous acid being more diluted than the other, and, according to Darraq, containing a portion of mucilaginous and extractive matter. The *concentrated acid from verdigris* is the *acetic acid* of the new nomenclature, the *radical vinegar* of the older chemists.

310. 'These strong acids are principally used as powerful stimulants, applied to the nostrils in languour and asphyxia. Their odour is pungent and grateful. They are capable also of acting as powerful rubefacients.

311. '*Acidum benzoicum*. Benzoic acid.—'Take of benzoic in powder, any quantity.—Put it into an earthen pot, to the mouth of which there has been previously adapted a paper cone: apply a gentle fire, that the acid may be sublimed: If it be contaminated with oil, let it be purified by solution in hot water, and crystallization.' (Or, according to the direction of the London College, its purification may be effected by mixing it with white clay, and again subliming it.) This acid exists ready formed in benzoin, and all the balsams, and, as it is volatile, is easily sublimed by heat.

312. Another process, supposed to be more economical, by M. Scheele, is as follows, in the *Prussian Pharmacopœia*:—'Take of powder benzoïn, 24 oz.; carbonat of soda, 8 oz. Mix them, and boil in 16 lb. of water, stirring constantly for half an hour. Strain. To the remaining benzoïn add 6 lb. of water. Boil them together, and strain. Mix both liquors, and evaporate to 2 lb. Filter the liquor, and add to it diluted sulphuric acid to saturation. The benzoic acid, precipitated under the form of a light greyish powder, is to be dissolved in boiling water; and the solution strained, while hot, through linen, is to be set aside to crystallize. The crystals are to be washed with cold water and dried.'

313. 'Benzoic acid has been supposed to possess some expectorant power, and, on this supposition, enters into the composition of the pargoric elixirs of the Pharmacopœias.

314. '*Acidum muriaticum*. Muriatic acid.—'Take of muriat of soda, 2 lb.; sulphuric acid, 16 oz.; water, 1 lb.; first expose the muriat of soda in a pot to a red heat for a short time; when cold, put it into a retort. Then pour the acid, mixed with the water, and cold, on the muriat of soda. Distil from a sand-bath with a moderate fire, as long as any acid comes over. Its specific gravity is to that of distilled water as 1170 to 1000.'

315. 'This process is an example of single affinity. The sulphuric acid combines with the soda of the muriat of soda, and the muriatic acid is disengaged. It combines with the watery vapour, and is thus easily condensed. It has generally a yellowish tinge, from the presence of a small quantity of iron, from which it can be freed by a second distillation. The principal use of this acid is for pharmaceutical purposes. It can scarcely be said to be employed as a medicine.

316. '*Acidum oxy-muriaticum*. Oxy-muriatic acid.—'Though no process is inserted in any Pharmacopœia for the preparation of this acid, it is applied, both in its pure state and in its combinations, to medicinal uses. Uncombined it has been employed to destroy contagion, and is perhaps the most effectual of any of the agents that have been used for this purpose.' (See *OXY-MURIATIC ACID*.) The vapours are diffused through the place where the contagion is to be destroyed.

317. 'Combined with potash, it forms a salt

employed as an anti-venereal remedy. To prepare this salt, 16 oz. of sub-carbonat of potash are dissolved in 4 lb. of water, and the solution is repeatedly agitated with 8 oz. of lime, to abstract the carbonic acid. The solution of pure potash is to be poured into the bottles of Woulfe's apparatus, connected with a retort, containing 3 lb. of muriat of soda, 1 lb. of black oxyd of manganese, and 2 lb. of sulphuric acid, previously diluted with one pound and a half of water. On applying a moderate heat to the retort by a sand-bath, the oxy-muriatic acid is disengaged, and passes through the solution of potash. Instead of combining directly, however, with the potash, it suffers decomposition: one part of it returns to the state of muriatic acid, the other becomes, what is properly speaking, a super-oxygenated acid. Both saturate themselves with potash; and the two salts are separated, from their different degrees of solubility: the common muriat remains dissolved, the super-oxygenated muriat crystallizes. The crystals are washed with a small quantity of cold water. They are in small plates of a silvery white colour.' This method of preparing the oxymuriat of potash is somewhat different from that prescribed by Dr Thomson. See *OXY-MURIAT*, N° 3. 'This salt is given in syphilis in a dose of 10 grains three or four times a-day.

318. '*Acidum nitrosum*. Nitrous acid.—'Take of pure nitrat of potash, beat to powder, 2 lb.; sulphuric acid, 16 oz. The nitrat of potash being put into a glass retort, pour upon it the sulphuric acid, and distil from a sand-bath with a fire gradually raised, until the iron is of an obscure red heat. The specific gravity of this acid is to that of distilled water as 1550 to 1000.'

319. 'In this process the sulphuric acid combines with the potash, and disengages the nitric acid. The latter acid, however, partly from the heat employed in the distillation, and partly perhaps from the exertion of a disposing affinity, suffers a slight decomposition; a small portion of it loses part of its oxygen, and a quantity of nitrous gas is formed; this is absorbed by the nitric acid, and forms the nitrous, which is more or less coloured and fuming, according to the degree of heat employed in the distillation. The residuum is sulphat of potash, with an excess of sulphuric acid.

320. 'Nitrous acid is extensively employed as a pharmaceutical agent: from the facility with which it parts with oxygen, it is one of the most important. In the state of vapour, it has been employed under the form of fumigation to destroy contagion; and has this advantage, that it can be applied without requiring the removal of the sick.'

321. '*Acidum nitrosum dilutum*. Diluted nitrous acid.—'Take of nitrous acid, water, equal weights. Mix, avoiding the noxious vapour.'

322. '*Acidum nitricum*. Nitric acid.—'Take of nitrous acid, any quantity. Put it into a retort, and a receiver being adapted, apply a very gentle heat until the reddest part shall have passed over, and the acid which remains in the retort shall have become nitric.' By the heat, the nitrous gas is the nitrous acid, which gives it the yellow colour, and the fuming quality is expelled, and condenses in the receiver, with a little acid.

The

The nitric acid remains colourless. Their medicinal powers are equal.

323. '*Spiritus ætheris nitrosi*. Spirit of nitrous ether.—Take of alcohol, 3 lb.; nitrous acid, 1 lb. Pour the alcohol into a large phial, placed in a vessel full of cold water, and add the acid gradually, with constant agitation. Close the phial lightly, and set it aside for 7 days in a cool place; then distil the liquor with the heat of boiling water, into a receiver kept cool with water or snow, as long as any spirit comes over.'

324. 'This answers perhaps all the purposes which could be derived from pure nitrous ether, which is very dangerous in the preparation.'

325. 'The theory of the action of acids on alcohol, and of the formation of ethers, is, notwithstanding modern researches, obscure; and that of nitrous ether is very imperfectly elucidated. It is ascertained, however, that during its production, portions of oxalic and acetic acids are formed; and the experiments of Bayen have clearly proved, that a very considerable portion of the nitric acid is decomposed or combined in such a manner with principles of the alcohol, that it is no longer capable of saturating an alkali. Perhaps it may be inferred, that the acid, by parting with oxygen to the elements of the alcohol, causes the formation of the oxalic and acetic acids, and that the remaining elements of the alcohol unite to form the ether. It appears to contain more carbon than sulphuric ether.'

326. 'The spirit of nitrous ether contains a portion of acid, from which it may be freed by a second distillation with magnesia or potash. It is fragrant, acidulous, very volatile and inflammable, soluble in alcohol and water. It is employed as a refrigerant and diuretic, sometimes as an antispasmodic: Its dose is from 30 to 50 drops.'

327. '*Acidum sulphuricum dilutum*. Diluted sulphuric acid, or diluted vitriolic acid.—Take of sulphuric acid, one part; water, 7 parts (in the London Pharmacopœia 8 parts). Mix them.' Sulphuric acid is obtained by burning sulphur mixed with from one eighth to one tenth of nitrate of potash, in large leaden chambers. By the oxygenation of the sulphur, the acid is formed, and is absorbed by water placed in the bottom of the chamber. This liquor, when sufficiently acidulated, is concentrated by boiling in glass retorts, and an acid obtained, thick and unctuous in its appearance, colourless and transparent, having a specific gravity of 1850.

328. 'Sulphuric acid thus prepared is never perfectly pure. It contains a quantity of sulphate of potash, and sometimes a small portion of sulphate of lead. From these it is in a great measure purified by dilution with water, the diluted acid being incapable of holding them dissolved. Its dose is also more manageable than that of the concentrated acid. As an astringent, it is taken to the extent of 30 drops.'

329. '*Acidum sulphuricum aromaticum*. Aromatic sulphuric acid.—Take of alcohol, 2 lb.; sulphuric acid, 6 oz. Drop the acid gradually into the alcohol. Digest the mixture with a very gentle heat in a close vessel for three days, then add of bark of cinnamon, one ounce and a half; of ginger, one ounce. Digest again in a close

vessel for six days; then strain through paper placed in a glass funnel.' Dose 30 drops.

330. '*Æther sulphuricus*. Sulphuric ether, formerly vitriolic ether.—Take of sulphuric acid, alcohol, of each 32 oz. Pour the alcohol into a glass retort, capable of bearing a sudden heat. Then pour on the acid in an uninterrupted stream. Mix them gradually by frequent and gentle agitation; then immediately distil from a sand-bath, previously heated for this purpose, into a receiver kept cool with water or snow. But regulate the heat in such a manner that the liquor may be made to boil as soon as possible, and continue to boil until 16 oz. have distilled over; then remove the retort from the sand. To the distilled liquor add two drachms of potash, then distil again from a high-necked retort, with a very gentle heat, into a receiver kept cool, until 10 oz. have passed over. If to the acid remaining in the retort after the first distillation, 16 oz. of alcohol be added, and the distillation repeated, ether will again be produced. And this may be often repeated.'

331. 'In the formation of sulphuric ether, it is found by experiment that the alcohol suffers decomposition; a portion of its carbon is separated in a sensible form, and renders the residual liquor thick and dark coloured; a quantity of water is formed, and the remaining elements of the alcohol unite to form the ether. Ether differs from alcohol in containing less carbon, or rather more hydrogen; and this difference is established, not only by the facts with regard to its formation, but likewise by the comparative products of their combustion.'

332. 'With regard to the agency of the sulphuric acid, by which these changes are effected in the composition of the alcohol, two opinions are at present maintained by chemists. According to the older doctrine, part of the sulphuric acid is decomposed; its oxygen combines with a portion of the hydrogen of the alcohol, and forms water; the balance of attractions among the elements of the alcohol being broken, carbon is deposited, and ether formed from a new combination of these remaining elements.'

333. 'FOURCROY and Vauquelin have denied that any decomposition of the acid is necessary for the formation of ether. They suppose that it acts solely by a disposing affinity, causing part of the oxygen and part of the hydrogen of the alcohol to enter into a binary combination to form water; whence results the exertion of new affinities, by which carbon is separated, and ether formed. The experiments from which this latter opinion has been deduced, are not unexceptionable; and the facts, that no acid which does not part with oxygen can form ether, while acids, which part with that principle readily, form it with facility, favour the supposition that the sulphuric acid occasions the formation of ether, by yielding part of its oxygen to the hydrogen of the alcohol.'

334. 'The principle, in conducting this process, is to stop it at the proper period; that is, when the formation of ether ceases, and sulphurous acid begins to be disengaged. This is best known by the neck of the retort being obscured with white fumes: when these appear, the fire must be immediately lowered or removed, as otherwise

otherwise the liquor in the retort would swell up and pass over into the receiver. The ether obtained by the first distillation is impure. It is diluted with water and alcohol, and impregnated generally with sulphurous acid. It is rectified by distilling it a second time with a very gentle heat, with the addition of potash, which attracts the sulphurous acid; or, what succeeds better, with the addition of black oxyd of manganese, which converts that acid into sulphuric.

335. 'Ether, properly prepared, has a penetrating diffusive odour, and a very pungent taste. It is highly volatile, evaporating rapidly at the common temperature of the atmosphere. It is soluble in ten parts of water, and combines with alcohol in every proportion. It is narcotic and antispasmodic. Its dose is half a drachm.

336. '*Ether sulphuricus cum alcohole*. Sulphuric ether with alcohol, formerly named spirit of vitriolic ether.—The London college order a compound spirit of vitriolic ether to be prepared by mixing 1 lb. of unrectified ether with 3 drachms of oil of wine. 'Take of sulphuric ether, one part; alcohol, two parts. Mix them.'

337. '*Ether sulphuricus cum alcohole aromaticus*. Aromatic sulphuric ether with alcohol.—This is made from the same materials, and in the same manner, as the compound tincture of cinnamon, unless that sulphuric ether with alcohol is used in place of diluted alcohol.

338. '*Carbonas ammoniæ; olim ammonia præparata*. Carbonat of ammonia.—'Take of muriat of ammonia, 1 lb.; carbonat of lime, commonly called chalk, dried, 2 lb. Each being separately reduced to powder, mix them, and sublime from a retort into a receiver kept cold.'

339. This is an example of double elective attraction. The muriatic acid of the muriat of ammonia combines with the lime of the carbonat of lime; and the carbonic acid of the latter unites with the ammonia of the former. The carbonat of ammonia which is formed is sublimed and obtained in a crystalline cake. It is used as a stimulant to the nostrils in fainting, and as a stimulant and diaphoretic, taken internally in a dose of from 5 to 15 grains.

340. '*Aqua carbonatis ammoniæ; olim aqua ammoniæ*. Water of carbonat of ammonia.—'Take of muriat of ammonia, carbonat of potash, of each 16 oz.; water, 2 lb. To the salts, mixed and put into a glass retort, add the water; then distil from a sand-bath with a fire gradually raised, to dryness.'

341. '*Liquor volatilis, sal, et oleum cornu cervi*. Volatile liquor, salt, and oil of hartshorn. *Pharm. Lond.*—'Take of hartshorn, 10 lb. Distil, increasing the fire gradually. A volatile liquor, salt, and oil, come over. The oil and the salt being separated, distil the liquor three times. To the salt add an equal weight of prepared chalk, and sublime three times, or until it become white. The same volatile liquor, salt, and oil, may be obtained from any of the parts of animals except fat.'

342. 'Though this at one time was supposed to be possessed of some peculiar virtues, it is now justly rejected from practice; and the carbonat of ammonia, obtained pure by the preceding processes, is preferred.

343. '*Aqua ammoniæ; olim aqua ammoniæ causticæ*. Water of ammonia.—'Take of muriat of ammonia, 16 oz.; lime, fresh prepared, 2 lb.; water, 6 lb. To one pound of water in an iron or earthen vessel, add the lime broken down, and close the vessel for 24 hours, until the lime fall into a fine powder, which put into a retort. To this add the muriat of ammonia, dissolved in 5 lb. of water, and, shutting the mouth of the retort, mix them by agitation. Lastly, distil with a heat so moderate, that the operator can easily apply his hand to the retort, into a receiver kept cold, until 20 oz. have distilled over. In this distillation the vessels are to be so luted as to confine effectually the penetrating vapours.'

344. 'The solution has a strong pungent smell, a very acrimonious taste, and inflames the skin. It is used in medicine as a powerful stimulant and diaphoretic; internally, in a dose of 20 drops; externally, as a stimulant and rubefacient.

345. '*Alcohol ammoniatum, five spiritus ammoniæ*. Ammoniated alcohol.—'Take of diluted alcohol, 4 lb.; muriat of ammonia, 4 oz.; carbonat of potash, 6 oz. Mix, and draw off by distillation with a gentle fire, 2 lb.' This has the pungent ammoniacal smell. It is used principally as the menstruum of some vegetables, with which ammonia coincides in medicinal operation.

346. '*Alcohol ammoniatum aromaticum, five spiritus ammoniæ aromaticus*. Aromatic ammoniated alcohol.—'Take of spirit of ammonia, 8 oz.; volatile oil of rosemary, one drachm and a half; volatile oil of lemon, 1 dr. Mix so as to dissolve the oils.' In the London Pharmacopœia, oil of cloves is ordered in place of oil of rosemary. The dose is 15 to 30 drops.

347. '*Alcohol ammoniatum fetidum, five spiritus ammoniæ fetidus*. Fetid ammoniated alcohol.—'Take of spirit of ammonia, 8 oz.; assafœtida, gum-resin, half an ounce. Let them digest in a close vessel for 12 hours; then distil 8 oz. by the heat of a water-bath.' In hysteria the dose is 30 drops.

348. '*Spiritus ammoniæ succinatus*. *Pharm. Lond.* Succinated spirit of ammonia.—'Take of alcohol, one ounce; water of pure ammonia, 4 oz.; rectified oil of amber, one scruple; soap, 10 gr. Digest the soap and the oil of amber in the alcohol until they are dissolved. Then add the water of pure ammonia, and mix by agitation.' This is an imperfect formula for the preparation of *Eau de Luce*.

349. '*Carbonas potassæ*. Carbonat of potash.—'Let impure carbonat of potash (which in English is named *pearl-ashes*) be put into a crucible, and brought to a red heat, that the oily impurities, if any are present, may be burnt out; then rubbing it with an equal weight of water, mix them thoroughly by agitation. The liquor, after the impurities have subsided, being poured off into a clean iron pot, is to be boiled to dryness, stirring the salt constantly towards the end of the boiling, that it may not adhere to the vessel.'

350. 'The PEARL-ASHES of commerce are obtained by the incineration of the wood of land vegetables. They consist of sub-carbonat of potash, with sulphat and muriat of potash, siliceous earth and metallic matter, from which they are purified

fied by this process. The salt is a sub-carbonat of potash. It is in white grains, and is deliquescent.

351. '*Carbonas potassae purissimus, olim sal tartari.* Pure carbonat of potash, formerly salt of tartar.—'Take of impure super-tartrate of potash, any quantity. Having wrapped it up in moist bibulous paper, or put it into a crucible, burn it into a black mass, by placing it among live coals. Having reduced it to powder, subject it to a moderate heat, in an open crucible, until it become white, or at least of an ash-grey colour, care being taken that it do not melt. Then dissolve it in warm water, strain the liquor through linen, and evaporate it in a clean iron vessel, stirring the matter constantly towards the end of the evaporation, with an iron spoon, that it may not adhere to the bottom of the vessel. A very white salt will remain, which is to be left a little longer on the fire, until the bottom of the vessel is nearly at a red heat. When cold it is to be kept in glass vessels, well stoppt.'

352. 'The tartarous acid is decomposed by exposing the super-tartrate of potash to heat. Part of its carbon and oxygen unite and form carbonic acid, which is attracted by the potash, and the carbonaceous matter is burnt out. A salt is obtained, which is a subcarbonat of potash. This salt is used as an antacid and diuretic.

353. '*Aqua potassae, vulgo lixivium causticum.* Water of potash.—'Take of newly prepared lime, 8 oz. carbonat of potash, 6 oz. Put the lime into an iron or earthen vessel, with 28 oz. of warm water. The ebullition being finished, immediately add the salt; and the whole being well mixed, close the vessel till they become cold. Let the cold materials, previously well agitated, be poured into a glass funnel, the throat of which is obstructed with clean linen. Cover the upper orifice of the funnel, while the neck of it is inserted in another glass vessel, that the water of potash may gradually drop through the linen into the lower vessel. When it first ceases to drop, pour into the funnel some ounces of water, but cautiously, so that it may swim above the matter. The water of potash will again begin to drop. In this manner the affusion of water is to be repeated, until 3 lb. have filtered, which will be in 2 or 3 days. The upper parts of the liquor are to be mixed with the lower by agitation, and it is to be kept in a vessel well stoppt.'

354. 'Lime, having a stronger attraction to carbonic acid than potash has, attracts that acid from the sub-carbonat, and leaves the potash pure. It is used in medicine as a lithontriptic and antacid.

355. '*Aqua super-carbonatis potassae.* Water of super-carbonat of potash.—'Take of water, 10 lb. pure carbonat of potash, one ounce. Dissolve, and expose the solution to the current of carbonic acid gas, which arises from three ounces of powdered carbonat of lime, three ounces of sulphuric acid, and three pounds of water gradually and cautiously mixed. The chemical apparatus invented by Nouth is well adapted to this preparation. But if a larger quantity of the solution is required, the apparatus of Woulfe is preferable. The colder the air is, and the greater the pres-

sure, the better will be the liquor. It ought to be kept in vessels well stoppt.'

356. '*Potash*, when used as a lithontriptic, irritates the stomach and bladder so much that it cannot be long continued. But when thus super-saturated with carbonic acid it is pleasant and safe. It is taken to the extent of 1 or 2 lb. in the day. When properly prepared, it is pungent and acridulous, and sparkles when poured into a glass.

357. '*Carbonas sodae, olim sal alkalinus fixus fossilis purificatus.* Carbonat of soda.—'Take of impure carbonat of soda, any quantity. Bruise it, and boil in water, until all the salt is dissolved. Strain the solution through paper, and evaporate it in an iron vessel, that after it has cooled crystals may form.' The crystals are rhomboidal, and contain a large quantity of water of crystallization. This salt is used as a lithontriptic under the form of a watery solution supersaturated with carbonic acid.

358. '*Aqua super-carbonatis sodae.* Water of super-carbonat of soda.—'This is prepared from 10 lb. of water and 2 oz. of carbonat of soda, in the same manner as the water of super-carbonat of potash.' This is also used as a lithontriptic, and preferred to the above as more pleasant.

359. '*Aqua acetitis ammoniac, vulgo spiritus Mindereri.* Water of acetite of ammonia.—'Take of carbonat of ammonia, any quantity. Pour on it as much distilled acetous acid as may be necessary to saturate exactly the ammonia.' It is given as a diaphoretic, in divided doses of one ounce.

360. '*Acetis potassae.* Acetite of potash.—'Take of pure carbonat of potash, any quantity. Boil it with a gentle heat in 4 or 5 times its weight of distilled acetous acid, and add more acid at different times, until, on the watery part of the former portion being nearly dissipated by evaporation, the acid newly added excite no effervescence: this will happen when about 20 parts of acid have been consumed. Then let it be slowly dried. Let the remaining impure salt be liquefied with a gentle heat, for a short time; then dissolved in water, and strained through paper. If the melting has been properly done, the strained liquor will be limpid; if not, of a brown colour. Afterwards evaporate with a very gentle heat this liquor, in a shallow glass vessel, stirring the salt while it concretes, that it may more quickly be brought to dryness. Lastly, the acetite of potash ought to be kept in a glass vessel, well closed, that it may not liquefy by the action of the air.'

361. 'In this process the acetous acid combines with the potash, disengaging the carbonic acid. The acetite of potash obtained by the evaporation is brownish. This salt was at one time celebrated as a diuretic, in a dose of one or two drachms; but it has now nearly fallen into disuse.

362. '*Potassa, olim causticum commune acerrimum.* Potash.—'Take of water of potash, any quantity. Evaporate it in a covered clean iron vessel, until, when the ebullition is finished, the saline matter flow smoothly like oil, which will happen before the vessel is at a red heat. Then pour it on a clean iron plate; cut it into small masses before it hardens, and immediately put them

them into a phial well stopp'd.' Potash in this form is used as a caustic; it quickly erodes animal matter, and, mixed with soap, has been used to open an ulcer.

363. '*Potassa cum calce, olim causticum commune minus.* Potash with lime.—' Take of water of potash, any quantity. Evaporate it to one third in a covered iron vessel; then mix with it as much newly slaked lime as may be sufficient to give it the consistence of a solid paste, which is to be kept in a stopp'd vessel." As a caustic, this is milder than the former, and is also less deliquescent.

364. '*Sulphas potassae: olim tartarum vitriolatum.* Sulphat of potash.—' Take of sulphuric acid, diluted with six times its weight of water, any quantity. Put it into a large glass vessel, and gradually drop into it, of carbonat of potash dissolved in six times its weight of water, as much as may be necessary to the perfect saturation of the acid. The effervescence being over, strain the liquor through paper; and, after due exhalation, put it aside, that crystals may form. Sulphat of potash may also be conveniently made, by dissolving the residuum of the distillation of nitrous acid in warm water, and saturating it with carbonat of potash."

365. 'In the former of these processes, the sulphuric acid unites with the potash of the carbonat of potash, and expels the carbonic acid with effervescence. In the latter, which is the one generally followed, the excess of sulphuric acid attached to the sulphat of potash, which remains after the distillation of nitrous acid, is saturated by the addition of a sufficient quantity of potash. The salt forms an irregular crystalline mass; it has a very bitter taste, and is sparingly soluble in water. Its virtues are those of a cathartic; its dose half an ounce.

366. '*Sulphas potassae cum sulphure, olim sal polyphrestus.* Sulphat of potash with sulphur.—' Take of nitrat of potash in powder, sublimed sulphur, equal weights. Throw them well mixed, in small quantities at a time, into a red-hot crucible. The deflagration being finished, let the salt cool, and keep it in a glass phial, well stopp'd." The nitrat of potash, being decomposed by the red heat, affords oxygen to the sulphur, in such proportions as to convert it into sulphuric and sulphurous acids. Both acids are attracted by the potash. In its medicinal qualities, this saline compound does not appear to differ from the sulphat of potash; and it is soon converted into it, by exposure to the air.

367. '*Tartaris potassae, olim tartarum solubile.* Tartrate of potash.—' Take of carbonat of potash, 1 lb. super-tartrate of potash, 3 lb. or as much as may be necessary; boiling water, 15 lb. To the carbonat of potash dissolved in the water, add, by small quantities, the super-tartrate of potash rubbed to a fine powder, as long as it excites effervescence, which generally ceases before three times the weight of the carbonat of potash have been thrown in. Then strain the liquor, when cold, through paper; and, after due exhalation, put it aside that crystals may form."

368. 'The excess of tartarous acid in the super-tartrate of potash, is saturated by the potash of the carbonat of potash, and the proper neutral

salt formed. It is not easily crystallized. In its preparation, therefore, the solution is usually evaporated to dryness. This salt has a bitter taste; it is very soluble in water, requiring only four parts of cold water for its solution. As a purgative, it is given in the dose of one ounce.

369. '*Tartaris potassae et sodae, olim sal rupe-lensis.* Tartrate of potash and soda.—' This is prepared from carbonat of soda and super-tartrate of potash, in the same manner as tartrate of potash.' The excess of tartarous acid in the acidulous tartrate of potash, being saturated in this preparation with soda, a triple salt is formed. It crystallizes in rhomboidal prisms; is soluble in five parts of water at 60°; has a bitter saline taste. It is employed as a cathartic, in the dose of one ounce; and is often preferred, as being less disagreeable than other saline cathartics.

370. '*Phosphas sodae.* Phosphat of soda.—' Take of bones, burnt to whiteness and reduced to powder, 10 lb; sulphuric acid, 6 lb.; water, 9 lb. Mix the powder in an earthen vessel with the sulphuric acid; then add the water, and again mix. Keep the vessel in a water-bath for 3 days; at the end of which dilute the matter, by adding other nine pounds of boiling water, and strain through a strong linen cloth, pouring over it gradually boiling water, until the whole acid is washed out. Put aside the strained liquor, that the impurities may subside, from which pour it off, and, by evaporation, reduce it to nine pounds. To this liquor, again poured off from the impurities, and heated in an earthen vessel, add carbonat of soda dissolved in warm water, until the effervescence ceases. Then strain, and put it aside that crystals may form. These being removed, add, if necessary, to the liquor, a little carbonat of soda, that the phosphoric acid may be exactly saturated; and prepare it by evaporation, again to form crystals, as long as these can be produced. Lastly, let the crystals be kept in a vessel well stopp'd."

371. 'The white residuum of burnt bones consists chiefly of phosphat of lime. The sulphuric acid decomposes it, by combining with the lime; the phosphoric acid, which is disengaged, dissolves, however, a portion of undecomposed phosphat of lime, forming a soluble compound. When carbonat of soda is added to the acidulous liquor obtained by washing the materials, the soda combines with the free phosphoric acid; the neutral phosphat of lime, which was combined with that acid, is precipitated, and the phosphat of soda crystallizes on evaporation of the strained liquor. Its crystals are rhomboidal, efflorescent, and require for solution only four parts of cold water. They consist, according to Thenard, of 19 of soda, 15 of acid, and 66 of water. Its taste is purely saline, without any bitterness; it is a mild cathartic, and, from being less nauseous to the taste than the other salts, it is entitled to preference. Its dose is one ounce.

372. '*Sulphas sodae: olim sal glauberi.* Sulphat of soda; Glauber's salt.—' Dissolve the acidulous salt remaining after the distillation of muriatic acid, in water; and add to it chalk, to remove the superfluous acid. Put it aside until the impurities have subsided; then, having poured off the

the liquor, and strained it through paper, reduce by evaporation, that crystals may be formed. The decomposition of muriat of soda by sulphuric acid, to prepare muriatic acid, more sulphuric acid is used than is barely sufficient; and hence the necessity of saturating this excess by the addition of chalk or carbonat of lime. The neutral sulphat of soda crystallizes in hexahedral crystals; they are efflorescent and soluble in rather less than three parts of cold water. This salt has been long in use as a cathartic, and its value is only lessened by its nauseous taste. Its dose is an ounce and a half.

373. '*Sulphuretum Potassæ; olim Hepar Sulphuris.* Take of carbonat of potash, sublimed sulphur, of each 8 oz. Having rubbed them together, put them into a large coated crucible; and a cover being adapted to it, apply the fire to it cautiously, until they melt. The crucible, after it has cooled, being broken, remove the sulphuret, and preserve it in a phial well stopp'd." During the fusion of these two substances, the sulphur and potash combine, and the carbonic acid is disengaged. The compound is easily fusible, and is of a brown colour, and inodorous. It is immediately partially decomposed by water, and portions of sulphat of potash and sulphurated hydrogen formed. The dose in which it has been proposed to be given, is from 10 to 20 grains three or four times a-day. It is said, in some cases of cancer, to have increased the efficacy of cicuta as a palliative, in doses of five grains.

374. '*Hydro-sulphuretum ammoniac.* Hydro-sulphuret of ammonia.—Take of water of ammonia, 4 oz. Expose it in a chemical apparatus to the stream of gas, which arises from sulphuret of iron, 4 oz.; muriatic acid, 8 oz. previously diluted with 2½ of water. The sulphuret of iron for this purpose is conveniently prepared from 3 parts of purified iron filings, and one part of sublimed sulphur, mixed together, and exposed in a covered crucible, to a moderate heat, until they unite.

375. 'The sulphurated hydrogen is produced in this process by the muriatic acid *disposing* the iron to decompose part of the water. The hydrogen disengaged immediately combines with a portion of the sulphur present, and this compound escaping in the state of gas, is passed through the water of ammonia, with which it unites, and forms a liquor of a dark green colour, and very foetid odour. Hydro-sulphuret of ammonia is capable of powerfully depressing the actions of the stomach and general system, and has been used, principally in diabetes, in a dose of 3 or 4 drops, 3 or 4 times a-day.

376. '*Murias barytæ.* Muriat of barytes.—Take of sulphat of barytes, 4 lb.; wood charcoal in powder, 4 oz. Roast the sulphat, that it may be the more easily reduced to a fine powder, with which is to be mixed the powdered charcoal. Put the matter into a crucible, to which a cover is adapted, and urge it with a strong fire for six hours. Put the matter well rubbed into 6 lb. of boiling water, in a closed glass or earthen vessel, and mix them by agitation, preventing, as much as possible, the access of the air. Let the vessel stand in a water bath, until the part not dissolved

has subsided; then pour off the liquor. Pour on the residuum 4 lb. of boiling water, which, after agitation and subsidence, add to the former liquor. While it is yet hot, or, if it has cooled, after it has been heated, drop into it muriatic acid as long as effervescence is excited. Then strain it and evaporate, that it may crystallize."

377. Sulphat of barytes may be decomposed by carbonat of potash by double affinity, and perhaps this is the least troublesome process; but when done with a view to the medicinal application of the barytes, it has been supposed defective, as it does not separate the metallic substances with which the native sulphat is so frequently intermixed. The process of decomposing it, therefore, by charcoal, has been deemed preferable. The carbonaceous matter attracts the oxygen of the sulphuric acid; the sulphur remains united with the barytes. This sulphuret of barytes, as well as a portion of hydro-sulphuret formed during the solution, are soluble in water; on dropping in muriatic acid, it combines with the barytes, the sulphur is precipitated, and the sulphurated hydrogen disengaged. By straining and evaporating the liquor, the muriat of barytes is obtained crystallized. It is used under the form of solution, for which also a formula is given:

378. '*Solutio muriatis barytæ.* Solution of muriat of barytes.—Take of muriat of barytes, one part. Distilled water, 3 parts. Dissolve. The saturated solution of muriat of barytes was introduced by Dr Crawford, as a remedy in scrofulous affections, and has been regarded as a tonic of considerable power. It is by no means inert, and the dose requires to be regulated with some care. Five drops are given twice a-day, and gradually increased to 20 or more.

379. '*Solutio muriatis calcis.* Solution of muriat of lime.—Take of pure carbonat of lime (namely white marble), in small pieces 9 oz.; muriatic acid, 16 oz.; water, 8 oz. Mix the acid with the water, and add gradually the pieces of carbonat of lime. The effervescence being finished, digest for an hour. Pour off the liquor, and reduce it by evaporation to dryness. Dissolve the residuum in its weight and a half of water, and strain. The muriatic acid combines with the lime, and disengages the carbonic acid. The solution of muriat of lime has been strongly recommended as a tonic, similar, and not inferior to the muriat of barytes. The dose is from 15 to 20 gr. of the dried salt, or 30 drops of the saturated solution.

380. '*Carbonas magnesiæ; olim Magnesia alba.* Carbonat of magnesia.—Take of sulphat of magnesia, carbonat of magnesia, of each equal weights. Let them be dissolved separately in twice their weight of warm water, and either strained or otherwise freed from impurities. Then mix them, and immediately add 8 times their weight of boiling water. Boil the liquor a little, stirring it at the same time; then allow it to remain at rest, until the heat be diminished a little, and strain it through linen, on which the carbonat of magnesia will remain. Wash it with pure water, until it be perfectly tasteless.

381. This is an example of double affinity, the sulphuric acid of the sulphat of magnesia combin-

ing with the potash of the carbonate of potash, and the carbonic acid uniting with the magnesia. The boiling water, and boiling the liquor, are, partly to dissolve the sulphat of potash, which is a salt sparingly soluble, and partly to give the carbonate of magnesia a smoothness which it has not when this precaution is not observed. Carbonat of magnesia, however, is generally prepared on a large scale from the *Bittern*, or liquor remaining after the crystallization of muriat of soda from seawater, which is principally a solution of muriat of magnesia; and there are some niceties of manipulation requisite to give it the lightness and smoothness which are valued as marks of its goodness. Carbonat of magnesia, properly prepared, is nearly insipid; it is extremely light, white, and smooth to the touch; is insoluble in water. It is given as an antacid in a dose from a scruple to a drachm; and the magnesia, by combining with acid in the stomach, forms a salt which acts as a laxative.

382. *Magnesia: olim Magnesia Usta.* Magnesia. — 'Let carbonate of magnesia be exposed in a crucible, to a red heat, for two hours. Then preserve it in glass phials well stopp'd.' By a red heat, the carbonic acid of the carbonate is expelled, and the pure magnesia remains. It loses about half its weight. A smaller quantity, therefore, of the pure magnesia, will produce the same effect as a larger of the carbonate. It is preferred to the latter, where, from the abundant acidity on the stomach, flatulence is occasioned by the disengagement of carbonic acid when the carbonate is employed.

SECT. XX. METALLICA.—METALLIC PREPARATIONS.

383. THE following metals are employed in medical practice: Silver, quicksilver, copper, iron, tin, lead, zinc, antimony, and arsenic. Metals, in their pure state, do not appear to exert any action on the living system; their combinations only possess medicinal virtues.

384. The oxydation of metals, and the combination of their oxyds with acids, are the chemical changes which communicate to them activity. In general they are more active, in proportion as they are more highly oxydated, and are still more so when combined with acids. Oxygen is not, however, to be regarded, according to a modern hypothesis, as the source of their activity: each metal possesses powers, which, though increased or diminished according to the degree of oxydation, are peculiar to itself, and remain in all its preparations.

ARGENTUM.—SILVER.

385. *Nitras Argenti: olim Confectum Lunare.* Nitrat of silver.— 'Take of the purest silver, extended in plates and cut, 4 oz.; diluted nitrous acid, 8 oz.; distilled water, 4 oz. Dissolve the silver in a phial with a gentle heat, and evaporate the solution to dryness. Then put the mass into a large crucible, which is to be put on the fire, which must be at first gentle, and gradually increased until the mass flow like oil. Then pour it into iron pipes, warmed and rubbed with grease.

Lastly, keep it in a glass vessel well stopp'd.' The silver in this process is oxydated and dissolved by the nitrous acid. By the fusion, part of the acid is expelled, so that this is rather a *sub-nitrat*. It is a strong caustic, and being easily applied, is in very general use.

ANTIMONIUM.—ANTIMONY.

386. *Sulphuretum antimonii preparatum: olim, Antimonium preparatum.* Prepared antimony.— 'Let sulphuret of antimony be prepared in the same manner as carbonate of lime.' See § 20.

387. *Oxidum Antimonii cum Sulphure Vitrificatum: olim, Vitrum Antimonii.* Vitrified sulphurated oxyd of antimony.— 'Strew sulphuret of antimony, rubbed to a coarse powder like sand, on a shallow unglazed earthen vessel, and apply to it a gentle fire, that the sulphuret of antimony may be slowly heated; at the same time stirring constantly the powder, that it may not run into lumps. White vapours, smelling of sulphur, will arise from it. When these, while the same degree of heat is kept up, cease, increase the heat a little, that vapours may again exhale; and proceed in this manner, until the powder, raised at length to a red heat, exhales no vapours. This powder being put into a crucible, is to be melted with a strong fire, until it assume the appearance of fused glass; then pour it upon a heated brass plate.'

388. 'In the first stage of this process, the greater part of the sulphur of the sulphuret of antimony is dissipated, and the antimony is imperfectly oxydated. This oxyd is then vitrified by the more intense heat applied. According to Thénard, it contains 16 of oxygen in the 100; but it is farther combined, according to Proust, with a portion of sulphuret of antimony; and, from the experiments of Vauquelin, it appears also to contain from 9 to 10 parts in the 100 of Glucious earth, derived probably from the crucibles in which it is prepared. It is violent and at the same time uncertain in its operation, and is not used but in preparing some of the other antimonials.

389. *Oxidum Antimonii Vitrificatum cum Cera: olim Vitrum Antimonii Ceratum.* Vitrified oxyd of antimony with wax.— 'Take of yellow wax, one part; vitrified sulphurated oxyd of antimony, eight parts. To the wax, melted in an iron vessel, add the oxyd rubbed to powder, and roast them with a gentle fire, for a quarter of an hour, stirring constantly with a spatula; then pour out the matter, which, when it is cold, rub to powder.' Though once highly recommended in dysentery, this may be regarded as an obsolete remedy. The dose was from 5 to 15 grains.

390. *Oxidum Antimonii cum Phosphate Calcis: olim, Pulvis Antimonialis.* Oxyd of antimony with phosphat of lime.— 'Take of sulphuret of antimony, rubbed to a coarse powder, hartshorn shavings, of each equal parts. Mix and throw them into a wide iron pot, red hot, and stir them constantly until they are burnt into a matter of an ash colour, which remove from the fire, rub to powder, and put into a coated crucible. Lute to this crucible another inverted, in the bottom of which a small hole is drilled; apply the fire, which is to be gradually raised to a white heat, and

and kept at this increased heat for two hours. Lastly, rub the matter, when cold, into a very fine powder.

391. 'This has been introduced into the Pharmacopœias, as affording a preparation similar to the celebrated empirical remedy, *James's Powder*.' See JAMES'S POWDER.

392. 'Mr Chenevix has proposed another method of obtaining this preparation. It consists in dissolving equal weights of the white powder, precipitated by water, from muriat of antimony, and of pure phosphat of lime, in as much muriatic acid as may be necessary, with the assistance of a moderate heat, and pouring this solution into ammonia diluted with distilled water. The ammonia combines with the muriatic acid, and the oxyd of antimony and phosphat of lime are thrown down intimately mixed.

393. 'James's powder has been long celebrated as a remedy in febrile affections. It acts as a very powerful evacuant, by sweating, purging, and vomiting. Its dose is 5 or 6 grains, repeated every 6 hours. It is better adapted to fevers of an inflammatory nature than to those of the typhoid kind.

394. '*Sulphuretum antimonii præcipitatum*. Precipitated sulphuret of antimony.—'Take of water of potash, 4 lb.; water, 3 lb.; prepared sulphuret of antimony, 2 lb.' Boil them in a covered iron pot, on a gentle fire, for 3 hours, stirring frequently with an iron spatula, and adding water as it may be necessary. Strain the hot liquor through a double linen cloth, and to this strained liquor add as much diluted sulphuric acid as may be necessary to precipitate the sulphuret, which is to be carefully washed with warm water."

395. 'From the analysis of this compound by Thenard, it appears to be composed of 68 $\frac{1}{3}$ of the orange-coloured oxyd of antimony, (which consists of 18 of oxygen, and 81 of antimony), 17 $\frac{1}{8}$ of sulphurated hydrogen, and 11 or 12 of sulphur. In boiling the sulphuret of antimony with the potash, a sulphuret of potash is formed, which, decomposing part of the water, hydro sulphuret is also produced, the antimony being oxydated.

396. 'When the liquor obtained by boiling the solution of potash on the sulphuret of antimony is strained, and allowed to cool, it deposits a red-coloured powder, which has been known by the name of KERMES MINERAL, and has been much used on the continent. From Thenard's analysis it appears to be a compound of brown oxyd of antimony and sulphurated hydrogen, with a small portion of sulphur. The dose of the precipitated sulphuret of antimony, or, as it should rather be named, the *Hydro-sulphurated Oxyd of Antimony*, is 5 or 6 grains.

397. '*Oxidum antimonii cum sulphure, per vitratum potasse*: olim, *Crocus Antimonii*. Oxyd of antimony with sulphur, by nitrat of potash.—'Take of sulphuret of antimony, nitrat of potash, of each equal weights. Triturate them separately, and, having mixed them well together, throw them into a crucible red hot. The deflagration being over, separate the reddish matter from the white crust, and rub it to a powder, which is to be frequently washed with warm water, until it remain insipid.'

398. 'During deflagration the nitric acid of the nitrat of potash is decomposed; its oxygen is attracted by the sulphur and the antimony. The sulphurous acid is dissipated: part of the sulphuret of antimony escapes and unites with the oxyd. The preparation is therefore an imperfect oxyd of antimony. As an antimonial, this preparation is so uncertain in its operation, that it is never prescribed; it is used in making some of the other preparations of this metal.

399. '*Muriat antimonii*. Muriat of antimony.—'Take of oxyd of antimony with sulphur by nitrat of potash, sulphuric acid, of each 1 lb.; dried muriat of Soda, 2 lb. Pour the sulphuric acid into a retort, adding gradually the muriat of soda and the oxyd of antimony, previously mixed. Then distil from warm sand. Expose the distilled matter for some days to the air, that it may deliquesce; then pour the liquid part from the impurities.

400. 'In this operation the muriat of soda is decomposed by the sulphuric acid combining with the soda; the muriatic acid disengaged, unites with the oxyd of antimony and the compound is volatilized. This preparation is unfit for internal use; externally it has sometimes been used as a caustic. Decomposed by potash, it affords an oxyd which has been used in preparing the tartrite of antimony.

401. '*Tartris antimonii: olim, Tartarus Emeticus*. Tartrite of antimony.—'Take of oxyd of antimony with sulphur by nitrat of potash, three parts; super-tartrite of potash, four parts; distilled water, 32 parts. Boil them in a glass vessel for a quarter of an hour. Strain through paper, and put aside the strained liquor, that crystals may be formed.

402. 'As this is the most important of the antimonial preparations, the processes for obtaining it have been often varied, principally in the selection of the oxyd of antimony employed. The object is to obtain an oxyd, not too expensive in its preparation, and which shall combine with facility with the tartarous acid. The vitrified oxyd is the most unexceptionable.

403. 'Tartrite of antimony and potash crystallizes in small triedral pyramids, which are efflorescent. It is very susceptible of decomposition, from acids, alkalies, earths, neutral salts, vegetable infusions and decoctions, &c. This preparation, however, is undoubtedly superior to the other antimonials, in the certainty of its operation; and, from its solubility, is more manageable with regard to dose. It is given as an emetic in a dose of from 1 to 3 grains dissolved in water; and, in smaller doses, as an expectorant and diaphoretic.

404. '*Vinum tartritis antimonii: olim, vinum antimoniale*. Wine of tartrite of antimony.—'Take of tartrite of antimony, 24 grains; white wine, 1 lb. Mix, so that the tartrite of antimony may be dissolved.' This salt is best preserved in wine. It is given as an emetic in the dose of one ounce; as a diaphoretic, in a much smaller dose.

405. '*Vinum antimonii tartarizati*. *Pharm. Lond.* Wine of tartarified antimony.—'Take of tartarified antimony, 2 scruples; boiling distilled water by measure, 2 oz. Spanish white wine by

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measure,

measure, 8 oz. Dissolve the tartarified antimony in the boiling distilled water, and add the wine. It is to be regretted, that preparations so similar in name as these two wines, should differ materially in strength; this containing 4 grains of tartrate of antimony in the ounce, the other only two grains. The dose of this wine, as an emetic, is half an ounce.

406. '*Vin n antimonii*. Antimonial wine. *Pharm. Lond.*—'Take of vitrified antimony, in powder, one ounce; Spanish white wine, one pound and a half. Digest for 12 days with frequent agitation, and strain through paper.'

407. '*Antimonium calcinatum*. Calced antimony. *Pharm. Lond.* White oxyd of antimony.—'Take of antimony (sulphuret of antimony) in powder, 8 oz. Nitre in powder, 2 lb. Mix them, and throw the mixture gradually into a red hot crucible. Burn the matter remaining after the deflagration for half an hour, and, when cold rub it to powder; then wash it with distilled water.'

408. 'This preparation is of little activity; it was supposed to be diaphoretic, and was given in a dose from 5 to 10 grains, as a substitute for James's powder; but it is now seldom employed.'

CUPRUM.—COPPER.

409. '*Ammoniuretum cupri; olim, cuprum ammoniacum*. Ammoniuuret of copper.—'Take of pure sulphat of copper, two parts; carbonat of ammonia, three parts. Rub them thoroughly in a glass mortar, until all effervescence is finished, and they unite uniformly into a violet-coloured mass, which being wrapt in bibulous paper, is to be dried, first on a chalk stone, and afterwards with a gentle heat. It is to be kept in a glass phial well stop'd.' The sulphat of copper is decomposed by the carbonat of ammonia; one part of ammonia combines with the sulphuric acid; another with the oxyd of copper; and the violet-coloured mass, which is formed, is a mixture of the two resulting compounds.

410. A compound somewhat similar is obtained, according to a formula inserted in several of the foreign pharmacopœias, in which a saturated solution of sulphat of copper is decomposed by ammonia, the ammonia being added in excess, so as to re-dissolve the oxyd of copper; to this solution alkohol is added, by which the ammoniuuret of copper is precipitated in small crystals. The present preparation has been chiefly employed as a remedy in epilepsy. It is given in a dose of at first half a grain twice a-day, which is gradually and slowly increased to two or three grains, and continued for some time.

411. '*Solutio sulphatis cupri compofita; olim, aqua styptica*. Compound solution of sulphat of copper.—'Take of sulphat of copper, sulphat of alum, of each 3 oz.; water 2 lb.; sulphuric acid one ounce and a half. Boil the sulphats in water, that they may be dissolved; then to the liquor strained through paper add the acid.' This has been applied topically to check hæmorrhage, and largely diluted with water, as a wash in purulent ophthalmia.

412. '*Aqua cupri ammoniaci*. Water of ammoni-

ated copper. *Pharm. Lond.*—'Take of sal ammoniac (muriat of ammonia), one drachm; lime water, 1 lb. Allow them to remain in a copper vessel until the ammonia is saturated with copper.' This has been applied, diluted with an equal part of water, as a gentle escharotic, to remove specks from the cornea. A similar preparation had formerly a place in the Edinburgh Pharmacopœia, under the name of *Aqua aeruginis ammoniata*.

FERRUM.—IRON.

413. '*Ferri limatura purificata*. Purified filings of iron.—'Having placed a sieve over the filings, apply a magnet, that they may be drawn through the sieve upwards.'

414. '*Carbonas ferri; olim, ferri rubigo*. Carbonat of iron.—'Let purified filings of iron be frequently moistened with water, that they may fall into a rust, which is to be rubbed to a fine powder.' See § 23.

415. '*Carbonas ferri precipitatus*. Precipitated carbonat of iron.—'Take of sulphat of iron, 4 oz.; carbonat of Soda, 5 oz.; water, 10 lb. Dissolve the sulphat of iron in the water; then add the carbonat of soda, previously dissolved in as much water as may be necessary, and mix them well. Let the carbonat of iron, which is precipitated, be washed with warm water, and afterwards dried.' Carbonat of iron is a mild, and not inactive preparation. It is given as a tonic, in a dose of 5 or 10 grains. The formula of Dr Grissiths, which has been highly celebrated as a chalybeate, is an extemporaneous preparation of this kind.

416. '*Ferri oxidum nigrum purificatum; olim, ferri squamæ purificatæ*. Purified black oxyd of iron.—'Let the scales of iron, gathered at the anvils of the workman, be purified, by applying a magnet. The magnet attracts only the smaller and purer scales, leaving the larger and less pure.'

417. '*Sulphas ferri*. Sulphat of iron.—'Take of purified filings of iron 6 oz.; sulphuric acid, 8 oz.; water, two pounds and a half. Mix them; and the effervescence being over, digest for a short time in a sand-bath; then strain the liquor through paper, and, after due evaporation, put it aside that crystals may form.' Sulphat of iron is one of the most active preparations of the metal. Its medium dose is from 3 to 5 grains.

418. '*Sulphas ferri exsiccatus*. Dried sulphat of iron.—'Take of sulphat of iron, any quantity. Heat it in an unglazed earthen vessel, on a gentle fire, until it become white and perfectly dry.'

419. '*Oxidum ferri rubrum*. Red oxyd of iron. † Let dried sulphat of iron be exposed to a violent heat, until it is converted into a red-coloured matter.'

420. '*Tinctura muriatis ferri*. Tincture of muriat of iron.—'Take of the purified black oxyd of iron, in powder, 3 oz.; muriatic acid, about 10 ounce. Digest with a gentle heat, and, when the powder is dissolved, add as much alkohol as that there shall be of the whole liquor two pounds and a half.' This is a very active preparation, and is given in the diseases in which iron is employed, in a dose of 10 or 15 drops.

421. '*Murias ammoniac et ferri; olim, ferri martialis*.

martiales. Muriat of ammonia and iron.—‘Take of red oxyd of iron, washed and again dried, muriat of ammonia, of each equal weights. Mix them well together, and sublime.’ It is not used.

422. ‘*Tinctura ferri ammoniacalis.* *Pharm. Lond.*—‘Take of ammoniacal iron, four ounces; proof spirit, by measure, one pound. Digest and strain.’

423. ‘*Ferrum tartarizatum.* Tartarised iron. *Pharm. Lond.*—‘Take of filings of iron, 1 lb.; crystals of tartar (super-tartrate of pot-ash), powdered, 2 lb.; distilled water, 1 lb. Mix them, and expose the mixture to the air in an open glass vessel for 8 days; then rub the matter, dried by a sand-bath, into a very fine powder.’ This medicine is milder in its operation than some of the other saline preparations of the metal. Its dose is from 5 to 15 grains. It is very soluble in water.

424. ‘*Vinum ferri.* Wine of iron. *Pharm. Lond.*—‘Take of filings of iron, 4 oz.; Spanish white wine, 4 lb. Digest with frequent agitation for a month, and strain.’ Dose 1 or 2 dr.

HYDRARGYRUS.—QUICKSILVER.

425. ‘*Hydrargyrum purificatus.* Purified quicksilver.—‘Take of quicksilver, four parts; iron filings, one part. Rub them together and distil from an iron vessel.’

426. ‘*Acetis hydrargyri.* Acetite of quicksilver.—‘Take of purified quicksilver, 3 oz.; diluted nitrous acid, 4½ oz. or a little more than may be requisite to dissolve the quicksilver; acetite of potash, 3 oz.; boiling water, 8 lb. Mix the quicksilver with the diluted nitrous acid; and towards the end of the effervescence, digest with a gentle heat, until the quicksilver be entirely dissolved. Then dissolve the acetite of pot-ash in boiling water, and immediately on this solution, while hot, pour the other, and mix them both by agitation. Then put aside, that crystals may be formed. These being placed in a funnel, wash them with cold distilled water; and, lastly, dry them with a very gentle heat. In preparing the acetite of quicksilver, it is necessary that all the vessels and the funnel which are employed should be of glass.’

427. ‘As an antisyphilitic remedy, acetite of mercury is very mild in its operation; but its effects are not considered as sufficiently permanent to allow of it being relied on in effecting a radical cure. Its dose is a grain, night and morning. It is soluble in hot water; not in cold.

428. ‘*Murius hydrargyri olim, mercurius sublimatus corrosivus.* Muriat of mercury, or corrosive sublimate.—‘Take of purified quicksilver, 2 lb.; sulphuric acid, two lb. and a half; muriat of soda, dried, 4 lb. Boil the sulphuric acid with the quicksilver in a glass vessel placed in a sand-bath, until the matter become dry. Mix the cold matter in a glass vessel with the muriat of soda; then sublime it in a glass cucurbit with a heat gradually raised. Separate the sublimed matter from the scoria.’ The process formerly used was, to mix sub-nitrate of mercury, muriat of soda, and dried sulphat of iron, and expose the mixture to a heat sufficient to sublime the muriat of mercury: And some think, notwithstanding the expense of the nitrous acid, that it more certainly affords the

whole mercury in the form of corrosive muriat, than the one now adopted.

429. ‘According to the analysis of muriat of mercury by M. Chenevix, it consists of 82 of oxyd of mercury (this oxyd being composed of 85 of mercury and 15 of oxygen), and 18 of muriatic acid; or, its ultimate constituents are, quicksilver 69.7, oxygen, 12.3, and muriatic acid, 18. By slow sublimation, it is obtained crystallized in slender prisms; by a more hasty sublimation, in a compact crystalline mass. It is easily soluble in water, requiring 20 parts at 60° for its solution, and 2 parts at 212°. It is likewise soluble in alcohol. Its taste is acid and metallic. It turns to a green several vegetable colours; is decomposed by the alkalies and earths, and by a number of compound salts, and likewise by vegetable infusions.

430. ‘It is the most powerful of the mercurial preparations. Its dose cannot safely exceed the 4th of a grain, nor can more than one grain be given in 24 hours. As an antisyphilitic remedy it has long been established in practice, and it possesses some advantages. It acts speedily, and its action is more general on the system, or less determined to particular parts; but these are more than counterbalanced by the occasional violence of its operation, and by the circumstance, which seems now admitted, that it cannot be so much relied on in establishing a permanent cure. It is given in the form of solution in water or alcohol, the dose being increased from the 6th to the 4th of a grain, night and morning, and mucilaginous diluents being freely taken, with the occasional use of opium. As the solution has a very disagreeable taste, it is sometimes made into pills with crumb of bread. In other diseases besides lues venerea, it is occasionally exhibited, particularly in cutaneous affections. Externally, its solution is employed as an escharotic in chancre and venereal ulcers of the mouth; and a very dilute solution of it has been used as an injection, to excite inflammation in obstinate gleet.

431. ‘*Sub murias hydrargyri olim, Calomelas.* Sub-muriat of quicksilver.—‘Take of muriat of quicksilver, rubbed to powder in a glass mortar, 4 oz; purified quicksilver, 3 oz. Rub them together in a glass mortar, with a little water, that the operator may be guarded against the acid powder which would otherwise arise, until the quicksilver is extinguished. Put the dried powder into an oblong phial, of which it shall fill only one 3d, and let it be sublimed in a sand-bath. The sublimation being finished, and the phial broken, the red powder at the bottom and the white one about the neck of it are equally to be rejected; the remaining mass is to be again sublimed, and rubbed into a fine powder, which is lastly to be washed with boiling distilled water.’

432. ‘In this process an additional quantity of quicksilver is brought into chemical union with the constituent principles of muriat of mercury. The proportions of the ingredients in the sub-muriat are, muriatic acid, 11.5, oxyd of mercury, 88.5, (this oxyd being composed of quicksilver, 89.3, and oxygen 16.7.) So that the ultimate constituent part of sub-muriat of mercury, are, quicksilver, 79, oxygen, 9.5, muriatic acid, 11.5.

433. ‘The names which have been chosen to distinguish

distinguish these two muriats of mercury, Mr Murray thinks, are not the best that might have been selected. The epithets *corrosive* and *mild* discriminate them more clearly, and, as systematic names, are preferable.

434. 'This preparation of mercury differs from the former, in being perfectly insipid, and insoluble in water or alcohol. By sublimation it may be obtained in small short prisms, but it is usually in the form of a mass somewhat ductile, semitransparent and very heavy. It is decomposed by the alkalies, earths, and various compound salts.

435. 'Sub-muriat, or mild muriat of mercury, is one of the most useful preparations of the metal. As an anti-venereal, it is given in the dose of a grain night and morning, its usual determination to the intestines being prevented, if necessary, by opium. It is the preparation which is, perhaps, most usually given in the other diseases in which mercury is employed, as in affections of the liver or neighbouring organs, in cutaneous diseases, chronic rheumatism, tetanus, hydrophobia, hydrocephalus, and febrile affections, especially those of warm climates. It is employed as a cathartic alone, or to promote the operation of other purgatives. Its anthelmintic power is justly celebrated; and it is perhaps superior to the other mercurials, in assisting the operation of diuretics in dropsy. From its great specific gravity, it ought always to be given in the form of bolus or pill.

436. 'Sub-murias hydrargyri præcipitatus. Precipitated sub-muriat of mercury.—'Take of diluted nitrous acid, purified quicksilver, of each 8 oz.; muriat of soda, 4½ oz.; boiling water, 8 lb. Mix the quicksilver with the diluted nitrous acid; and, towards the end of the effervescence, digest with a gentle heat, shaking the vessel frequently. It is necessary, however, that more quicksilver should be mixed with the acid than this can dissolve, that the solution may be obtained fully saturated. Dissolve at the same time the muriat of soda in the boiling water: pour the other solution on this while warm, and mix them quickly together. After the precipitate subsides, pour off the saline liquor, and wash the sub-muriat of mercury, by frequently adding warm water, pouring it off after each time the precipitate subsides, until it come off tasteless.'

437. 'In the original process of Scheele, the nitrous acid was directed to be boiled on the mercury, to saturate it more fully with the metal, that by adding a large proportion of mercury to nitrous acid, and promoting the solution by heat, the combination might be obtained in which the metal is imperfectly oxydated. It is found, however, that this is not the case.

438. 'Mild muriat of mercury, prepared in this mode, is precisely the same in its chemical composition as when formed by the former process of sublimation. It has been supposed, however, that it differs somewhat in its operation, and is more liable to produce purging. If such a difference exist, it is owing to the presence of the sub-nitrat, mixed with the mild muriat. If the latter is pure, its operation must be the same as that of the muriat prepared by sublimation, as it differs from it only in being in a much finer powder, and this is supposed to give it some superiority.

439. 'Oxidum hydrargyri cinereum. Ash-coloured oxyd of quicksilver.—'Take of purified quicksilver, 4 parts; diluted nitrous acid, 5 parts; distilled water, 15 parts; water of carbonat of ammonia, q. s. Dissolve the quicksilver in the acid. Add gradually the distilled water. Then pour on as much of the water of carbonat of ammonia as may be sufficient to precipitate the oxyd of quicksilver, which is to be afterwards washed with pure water and dried.'

440. 'Ash-coloured oxyd of mercury, is very similar in its operation to the preparations in which quicksilver is oxydated by trituration. It is given as an anti-venereal in the dose of one grain night and morning, generally in the form of pill.

441. 'Oxidum hydrargyri rubrum per acidum nitricum: olim, mercurius præcipitatus ruber. Red oxyd of quicksilver, by nitric acid.—'Take of purified quicksilver, 1 lb.; diluted nitrous acid, 16 oz. Let the quicksilver be dissolved. Evaporate the solution with a gentle fire to a white dry mass, which, being reduced to powder, is to be put into a glass cucurbit, a thick glass plate being put over its surface. Then a capital being adapted, and the vessel placed in sand, apply to it a fire gradually raised, until it pass into very red small scales.' This is too acrid for internal use, and is principally used externally as an escharotic.

442. 'Sub-sulphas hydrargyri flavus: olim, Turpetum minerale. Yellow sub-sulphat of quicksilver.—'Take of purified quicksilver, 4 oz.; sulphuric acid, 6 oz. Put them into a glass cucurbit, and boil in a sand-bath to dryness. The white matter remaining at the bottom of the vessel being powdered, is to be thrown into boiling water. It will thus be converted into a yellow powder, which must be frequently washed with warm water.'

443. 'As a medicine, it is too violent to be administered internally. Sometimes it has been given as a powerful emetic, in a dose of 5 grains, in cases of swelled testicle. It is a violent emetic, and has been employed as such mixed with any mild vegetable powder.

444. 'Sulphuretum hydrargyri nigrum: olim, Æthiops Mineralis. Black sulphuret of quicksilver.—'Take of purified quicksilver, sublimed sulphur, of each equal weights. Rub them together in a glass mortar with a glass pestle, until the globules of quicksilver entirely disappear.' By this trituration a chemical combination appears to be effected between the quicksilver and sulphur. It is in the form of a very black powder. It is the most inactive, perhaps, of the mercurial preparations. As an anthelmintic it is sometimes given in a dose of 5 or 10 gr. according to the age.

445. 'Some additional preparations of mercury have a place in the London Pharmacopœia, and are used in practice.

446. 'Hydrargyrus sulphuratus ruber. Red sulphurated quicksilver. Cinnabar.—'Take of purified quicksilver, 40 oz.; sulphur, 8 oz. Mix the quicksilver with the melted sulphur. If the mixture inflame, extinguish it by covering the vessel; then reduce it to powder and sublime.' This is used medicinally, principally under the form of fumigation,

fumigation, to check the progress of venereal ulcers.

447. '*Hydrargyrum cum creta*. Quicksilver with chalk.—'Take of purified quicksilver, 3 oz.; prepared chalk, 5 oz. Rub them together until the globules disappear.' This is very little used.

448. '*Hydrargyrum calcinatum*. Calcinated quicksilver. Red oxyd of quicksilver.—'Take of purified quicksilver, 1 lb. Expose the quicksilver in a glass cucurbit, having a flat bottom, in a sand-bath, to a heat of 600°, until it concretes into a red powder.' The high price of this preparation prevents it from being employed in common practice. It has been regarded as one of the most active of the mercurials, and, at the same time, one of the most permanent in its effects, and has been recommended in confirmed lues, where other preparations have failed. Its dose is half a grain or a grain.

449. '*Calx hydrargyri alba*. White calx of quicksilver.—'Take of muriated quicksilver, sal-ammoniac (*muriat of ammonia*), water of prepared kali, of each half a pound. Dissolve first the sal-ammoniac, and then the muriated quicksilver, in distilled water, to which add the water of prepared kali. Wash the powder until it is tasteless.' This preparation, formerly known by the name of *white precipitate of mercury*, is used only externally in the form of ointment, as an application in some cutaneous affections.

PLUMBUM.—LEAD.

450. '*Acetis plumbi: olim, saccharum saturni, or cerussa acetata*. Acetite of lead.—'Take of white oxyd of lead, any quantity. Put it into a cucurbit, and pour upon it twice its weight of distilled acetic acid. Let the mixture stand on warm sand until the acid become sweet; then pour it off, and add a fresh quantity as often as necessary, until it cease to acquire sweetness. Then evaporate the whole liquor, freed from impurities, in a glass vessel, to the consistence of thin honey, and put it aside in a cool place, that crystals may concrete, which are to be dried in the shade. Evaporate the remaining liquor, that there may be a new formation of crystals, and repeat this evaporation until no more are formed.' It is principally employed externally as an astringent,—as a collyrium in ophthalmia; an injection in gonorrhœa; and a wash in superficial inflammation.

451. '*Aqua lithargyri acetati*. Water of acetated litharge. *Pharm. Lond.*—'Take of litharge, 2 lb. 4 oz.; distilled vinegar, one gallon. Mix them, and boil to 6 lb. stirring constantly; then put aside the liquor. After the impurities have subsided, strain it.' This preparation has been long in use under the name of *Goulard's extract of lead*. It is merely a solution of acetite of lead in water with an excess of acid, and must be always variable in strength. It is applied to the same purposes as the acetite of lead.

ZINCUM.—ZINC.

452. '*Oxidum zinci*. Oxyd of zinc.—'Let a large crucible be placed in a furnace filled with burning fuel, so that it shall be somewhat inclined to its mouth; and, when the bottom of the cru-

cible is at a moderate red heat, throw in pieces of zinc, about the weight, each of them, of one drachm. The zinc soon inflames, and is converted into white floculi, which are to be removed, from time to time, from the surface of the metal, with an iron spatula, that the combustion may proceed more perfectly; and, when the inflammation ceases, remove the oxyd of zinc from the crucible. Another piece of zinc being thrown in, the operation is to be renewed and repeated as often as may be necessary. Lastly, let the oxyd of zinc be prepared in the same manner as carbonat of lime.' This is employed principally as an antispasmodic in epilepsy and chorea. Its dose is from 2 to 5 gr. twice a-day, gradually increased.

453. '*Sulphas zinci: olim, vitriolum album*. Sulphat of zinc, or white vitriol.—'Take of zinc, cut into small pieces, 3 oz.; sulphuric acid, 5 oz.; water, 20 oz. Mix them, and the effervescence being finished, digest for some time on warm sand. Then strain the liquor through paper; and, after due exhalation, put it aside that crystals may be formed.' Sulphat of zinc is used principally as an astringent, in the form of solution,—as an injection in gonorrhœa, and a collyrium in ophthalmia.

454. '*Solutio sulphatus zinci*. Solution of sulphat of zinc.—'Take of sulphat of zinc, 16 gr.; water, 8 oz.; diluted sulphuric acid, 16 drops. Dissolve the sulphat of zinc in water; then the acid being added, strain through paper.' It is chiefly used as a collyrium in ophthalmia.

455. '*Aqua zinci vitriolati cum camphora*. Water of vitriolated zinc with camphor. *Pharm. Lond.*—'Take of vitriolated zinc, half an ounce; camphorated spirit, half an ounce by measure; boiling water, by measure, 2 lb. Mix them, and strain through paper.' This also is used as a local application in ophthalmia, diluted with water.

456. '*Solutio acetitis zinci*. Solution of acetite of zinc.—'Take of sulphat of zinc, one drachm; distilled water, 10 oz. Dissolve it. Take also of acetite of lead, 4 scruples; distilled water, 10 oz. Dissolve it. Mix the solutions. Let the liquor remain at rest a little; then strain it.' This solution is used as an injection in gonorrhœa; it is more astringent than the acetite of lead, and less irritating than the sulphat of zinc.

SECT. XXI. PULVERES.—POWDERS.

457. 'This is the simplest form of composition of medicines, the different articles being merely reduced to powder, and mixed together. It is adapted to the exhibition of such remedies as are not ungrateful, and such as are not liable to lose their virtues by keeping. The powder, when it is to be taken, is mixed with any convenient vehicle.

458. '*Pulvis aromaticus*. Aromatic powder.—'Take of bark of cinnamon, smaller cardamom seeds, ginger root, of each equal parts. Rub them into a very fine powder, which is to be kept in a glass phial well stopp'd.' In the London Pharmacopœia the proportion of cinnamon is larger, and one part of long pepper is likewise added. It is used merely to give fragrance to other compositions.

459. '*Pulvis asæi Europæi compositus*. Compound

pound powder of asarabacca.—‘Take of the leaves of asarabacca, three parts; the leaves of marjoram, flowers of lavender, of each one part. Rub them together to a powder.’ This is used as a mild errhine, and, when a few grains are snuffed, occasions sneezing.

460. ‘*Pulvis carbonatis calcis compositus*: olim, *pulvis cretaceus*.—‘Take of prepared carbonate of lime, 4 oz.; bark of cinnamon, one drachm and a half; nutmeg, half a drachm. Rub them together to powder.

461. ‘*Pulvis cretæ compositus*. Compound powder of chalk. *Pharm. Lond.*—‘Take of prepared chalk, half a pound; bark of cinnamon, 4 oz.; tormentil, gum arabic, of each 3 oz.; long pepper, half an ounce. Reduce them separately to powder, and mix them.’ These powders are designed as antacids, and are used principally in diarrhoea. The tormentil of the London Pharmacopœia must render it more astringent. The dose of either is from a scruple to a drachm.

462. ‘*Pulvis cretæ compositus cum opio*. Compound powder of chalk with opium. *Pharm. Lond.*—‘Take of compound powder of chalk, 8 oz.; hard purified opium, rubbed to powder, one drachm and a half. Mix them.’ The addition of opium to astringents and antacids in diarrhoea is a common practice, and this formula affords a convenient composition of this kind. Its dose is one scruple or half a drachm. Two scruples contain very nearly one grain of opium.

463. ‘*Pulvis chelurum cancri compositus*. Compound powder of crabs claws. *Pharm. Lond.*—‘Take of prepared crabs claws, 1 lb.; prepared chalk, prepared red coral, of each 3 oz. Mix them.’ These different articles being merely carbonates of lime, more or less pure, the mixing of them together must be entirely superfluous.

464. ‘*Pulvis jalapæ compositus*. Compound powder of jalap.—‘Take of the powder of the root of jalap, one part; supertartrate of potash, two parts. Rub them together into a very fine powder.’ By this addition of the acidulous tartrate of potash to jalap, the operation of the latter is supposed to be rendered less irritating and more refrigerant. It is an excellent cathartic, operating freely, in a dose of a drachm and a half.

465. ‘*Pulvis ipecacuanhæ et opii*: olim, *pulvis Doveri*. Powder of ipecacuanha and opium.—‘Take of the powder of the root of ipecacuanha, opium, of each one part; sulphat of potash, 8 parts. Rub them together into a fine powder.’ In this composition we have an example of the power which one medicine has of modifying the action of another, the ipecacuan rendering the operation of the opium, as a sudorific, much more certain than it otherwise would be, and appearing also to diminish its narcotic effect. This powder is the most certain sudorific we possess, and as such is established in practice. The medium dose is 15 grains, the operation of which is to be assisted by the sweating regimen; and frequently it is necessary to give additional smaller doses at intervals, to produce sweat. Its principal use is in rheumatism.

466. ‘*Pulvis opiatius*. Opiate powder.—‘Take of opium, one part; prepared carbonate of lime,

nine parts. Rub them together to a fine powder.’

467. ‘*Pulvis opiatius*. Opiate powder. *Pharm. Lond.*—‘Take of hard purified opium, rubbed to powder, one drachm; prepared burnt hartshorn, 9 drachms. Mix them.’ In these powders the opium is merely divided by the substance mixed with it. Ten grains contain one grain of opium.

468. ‘*Pulvis scammonii compositus*. Compound powder of scammony.—‘Take of scammony, supertartrate of potash, of each equal parts. Rub them together into a very fine powder.’ The purgative operation of the scammony is supposed to be rendered milder by the supertartrate of potash. Its dose is from 10 to 20 grains.

469. ‘*Pulvis scammonii compositus*. Compound powder of scammony. *Pharm. Lond.*—‘Take of scammony, extract of jalap, of each 2 oz.; ginger, half an ounce. Rub them separately to powder, and mix them.’ This composition is of a very different nature from the preceding; the stimulating operation of the scammony not being corrected, but rather increased by the extract of jalap, and the ginger. It is a strong cathartic. Its dose is 10 grains.

470. ‘*Pulvis scammonii compositus cum aloë*. Compound powder of scammony with aloes. *Pharm. Lond.*—‘Take of scammony, fix drachms; extract of jalap, socotorine aloes, of each one oz. and a half; ginger, half an ounce. Rub them separately to powder, and mix them.’ The addition of the aloes cannot alter very materially the operation of the other ingredients. As a stimulating cathartic it may be given in a dose from 10 to 15 grains.

471. ‘*Pulvis scammonii cum calomelane*. Powder of scammony with calomel. *Pharm. Lond.*—‘Take of scammony, half an ounce; calomel, refined sugar, of each two drachms. Rub them separately to powder, and mix them.’ It is used both as a cathartic and anthelmintic. Its dose is from ten grains to one scruple.

472. ‘*Pulvis sulphatis aluminæ compositus*: olim, *pulvis stypticus*. Styptic powder, now compound powder of sulphat of argil.—‘Take of sulphat of argil, four parts; kino, one part. Rub them into a fine powder.’ This has been sometimes used internally in menorrhagia, in repeated doses of 10 or 15 grains, and externally as a styptic to bleeding wounds.

473. ‘*Pulvis aloës cum canella*. Powder of aloes with canella. *Pharm. Lond.*—‘Take of socotorine aloes, 1 lb.; white canella, 3 oz. Rub them separately to powder; then mix them.’ The canella covers the unpleasant flavour of the aloes; and, this combination is sometimes used as a warm stimulating cathartic. It is generally made into a tincture, by infusing it in spirit.

474. ‘*Pulvis aloës cum guaiaco*. Powder of aloes with guaiac. *Pharm. Lond.*—‘Take of socotorine aloes, one ounce and a half; guaiac gum resin, one ounce; aromatic powder, half an ounce. Rub the aloes and guaiac separately into powder; then mix them with the aromatic powder.’ This combination is seldom used. As a stimulating aperient, it may be given in a dose of 15 or 20 gr.

475. '*Pulvis aloes cum ferro.* Powder of aloes with iron. *Pharm. Lond.*—' Take of socotorine aloes, one ounce and a half; myrrh, two ounces; dried extract of gentian, sulphat of iron, of each one ounce. Rub them separately to powder, and mix them.' This combination affords a remedy of considerable power in amenorrhœa. Its dose is from 10 to 15 grains at bed time.

476. '*Pulvis cerussæ compositus.* Compound powder of ceruse. *Pharm. Lond.*—' Take of ceruse, five ounces; sarcocolla, one ounce and a half; tragacanth, half an ounce. Rub them together into a powder.' This is used as an external application to superficial inflammation, diffused in water, and sometimes as a collyrium, or an injection in gonorrhœa.

477. '*Pulvis contrayervæ compositus.* Compound powder of contrayerva. *Pharm. Lond.*—' Take of contrayerva, rubbed to powder, five ounces; compound powder of crabs claws, one pound and a half.' There seems little necessity for combining contrayerva with carbonat of lime, which can add nothing to its virtues. The dose may be half a drachm, or two scruples.

478. '*Pulvis myrrhæ compositus.* Compound powder of myrrh. *Pharm. Lond.*—' Take of myrrh, dried lavin, dried rue, Russian castor, of each one ounce. Rub them together to a powder.' This is a combination of some of the more powerful emmenagogues. It may be given in amenorrhœa in the dose of one scruple, or half a drachm.

479. '*Pulvis fennæ compositus.* Compound powder of fenna. *Pharm. Lond.*—' Take of fenna, crystals of Tartar, of each two ounces; scammony, half an ounce; ginger, two drachms. Rub the scammony separately, the others together, into a powder, and mix them.' It may be used as a purgative, in a dose of from half a drachm to a drachm.

480. '*Pulvis tragacanthæ compositus.* Compound powder of tragacanth. *Pharm. Lond.*—' Take of tragacanth, rubbed to powder, gum arabic, starch, of each one ounce and a half; refined sugar three ounces. Rub them together into powder.' This combination of mucilaginous substances may be employed as demulcents, in the dose of a drachm, or more, frequently repeated.

SECT. XXII. ELECTUARIA.—ELECTUARIES.

481. 'ELECTUARIES are compositions of the consistence nearly of honey, and are generally made by adding to any powder a sufficient proportion of syrup or mucilage. It is a form adapted to the exhibition of such medicines as are not ungrateful in taste or flavour. The ingredients are so proportioned, that the dose shall not be less than a tea spoonful, and not more than twice or thrice that quantity, at a time.

482. '*Electuarium aromaticum.* Aromatic electuary.—' Take of aromatic powder, one part; syrup of orange peel, two parts. Mix, beating them well together.' This is a grateful aromatic preparation, frequently combined with other medicines, or made the basis of cordial mixtures.

483. '*Electuarium cassiæ fissulæ.* Electuary of purging cassia.—' Take of the pulp of cassia in

Pods, four parts; pulp of tamarind, manna, of each one part; syrup of pale rose, four parts. Dissolve the manna beat in a mortar, with a gentle heat, in the syrup; then add the pulps, and, by a continued heat, reduce the mixture to a proper consistence.' This is scarcely ever used. It is a mild laxative in the dose of an ounce.

484. '*Electuarium cassiæ fennæ; olim, electuarium lenitivum.* Electuary of fenna.—' Take of the leaves of fenna, eight ounces; coriander seeds, four ounces; liquorice root, three ounces; figs, one pound; pulp of tamarind, pulp of cassia, pulp of prunes, of each half a pound; refined sugar, two pounds and a half. Rub the fenna with the coriander seeds, and separate by passing through a sieve ten ounces of the mixed powder. Boil the residuum with the figs and the liquorice, in four pounds of water to one half; then express and strain. Reduce the strained liquor, by evaporation, to about one pound and a half. Afterwards add the sugar, so as to make a syrup. Add this syrup gradually to the pulps; and, lastly, mix in the powder.' This electuary is in very common use as a mild and pleasant purgative. Its dose is six drachms, or an ounce.

485. '*Electuarium catechu; olim, confectio japonica.* Electuary of catechu.—' Take of extract of catechu, four ounces; kino, three ounces; bark of cinnamon, nutmeg, of each one ounce; opium, diffused in a sufficient quantity of Spanish white wine, one drachm and a half; syrup of red rose, boiled to the consistence of honey, two pounds and a quarter. Reduce the solid ingredients to powder, and, mixing with them the opium and syrup, form an electuary.' This is a combination of the more powerful astringents, rendered grateful by aromatics, and having its efficacy, as a remedy in diarrhœa, increased by the opium. It is the basis of the common extemporaneous astringent mixture. One grain of opium is contained in rather more than three drachms.

486. '*Electuarium opiatum; olim electuarium thebaicum.* Opiate electuary.—' Take of aromatic powder, six ounces; Virginian snake-root, rubbed to a fine powder, three ounces; opium, diffused in a sufficient quantity of Spanish white wine, half an ounce; syrup of ginger, one pound. Mix, so as to form an electuary.' This has kept its place in the Pharmacopœias as a substitute for the mithridate and theriaca Andromachi; preparations once highly celebrated, but now discarded. Each drachm contains a grain and a half of opium; and rather more in that prepared by the prescription of the London College.

487. '*Electuarium scammonii.* Electuary of scammony. *Pharm. Lond.*—' Take of scammony, rubbed to powder, one ounce and a half; cloves, ginger, of each six drachms; oil of caraway, half a drachm; syrup of roses, *q. s.* Mix the aromatics, rubbed together into a powder, with the syrup; then add the scammony, and lastly, the oil of caraway.' This is a stimulating cathartic; its dose is one drachm.

SECT. XXIII. PILULÆ.—PILLS.

488. 'PILLS are formed from a mass sufficiently stiff and adhesive to preserve the round form

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form which is given to them; this due consistence being obtained by adding to powder a sufficient quantity of syrup, mucilage or conserve. It is a form adapted to the exhibition of such medicines as are nauseous in taste or flavour, and such as operate in a small dose. A pill ought not to exceed five grains in weight, or it may be formed from a drachm of the mass.

489. '*Pilulae aloeticæ*. Aloetic pills.—'Take of socotorine aloes, in powder, soap, of each equal parts. Beat them with simple syrup, so as to make a mass fit for forming pills.'

490. '*Pilulae aloes compositæ*. Compound aloes pills. *Pharm. Lond.*—'Take of socotorine aloes, in powder, one ounce; extract of gentian, half an ounce; oil of caraway, two scruples; syrup of ginger, *q. s.* Beat them together.' Under either of these simple forms, aloes is very commonly exhibited as a cathartic. Two pills are a medium dose.

491. '*Pilulae aloes cum assa foetida*. Pills of aloes with assafoetida.—'Take of socotorine aloes, assafoetida, soap, of each equal parts. Beat them into a mass with mucilage of gum arabic.' These pills have been given in dyspepsia and amenorrhœa, two or three being taken at bed-time occasionally.

492. '*Pilulae aloes cum colocynthide*. Pills of aloes with colocynth.—'Take of socotorine aloes, scammony, of each eight parts; colocynth, four parts; sulphat of potash with sulphur, oil of cloves, of each one part. Let the aloes and scammony be reduced, with the salt, to powder; then let the colocynth, rubbed into a fine powder, and the oil, be added. Lastly, beat them with mucilage of gum arabic into a mass.' This is a more powerful cathartic than the simple aloetic pill, and is used in constipation, or to obviate habitual costiveness. Two pills are a common dose.

493. '*Pilulae aloes cum myrrha*. Pills of aloes with myrrh.—'Take of socotorine aloes, four parts; myrrh, two parts; saffron, one part. Beat them into a mass with simple syrup.' This composition has long been in use as a stimulating aperient. Two or three pills are taken at bed-time.

494. '*Pilulae assæ foetidæ compositæ*. Compound assafoetida pills.—'Take of assafoetida, galbanum, myrrh, of each eight parts; rectified oil of amber, one part. Beat them into a mass with simple syrup.' These pills are used in hysteria and amenorrhœa, two or three of them being taken at bed-time.

495. '*Pilulae galbani compositæ*. Compound pills of galbanum. *Pharm. Lond.*—'Take of galbanum, opoponax, myrrh, sagapenum, of each one ounce; assafoetida, half an ounce; syrup of saffron, *q. s.* Beat them together.' These pills are similar to the preceding; are used in the same cases, and in the same dose.

496. '*Pilulae ammoniacetæ cupri*. Pills of ammoniuret of copper.—'Take of ammoniuret of copper, sixteen grains; crumb of bread, four scruples; water of carbonat of ammonia, as much as may be sufficient. Beat them into a mass, which divide into 32 equal pills.' Under this form, ammoniuret of copper is given in epilepsy, and the other spasmodic diseases in which it has been

employed. Half a grain of it is contained in each pill. One pill is given at first, night and morning, and the dose is gradually increased.

497. '*Pilulae hydragryi*. Mercurial pill.—'Take of purified quicksilver, conserve of red roses, of each one ounce; starch, two ounces. Rub the quicksilver with the conserve, in a glass mortar, until the globules entirely disappear, adding, as there may be occasion, a little mucilage of gum arabic; then add the starch, and beat, with a little water, into a mass, which is to be immediately divided into 480 pills.' This is the preparation of mercury that is most generally employed for internal use; and, while it is much milder in its operation than some others, it is perhaps capable of answering every purpose which the remedy can serve. The common dose, given with the view of inducing the usual mercurial action, is two pills at bed-time, and one in the morning, which, in particular cases and habits, requires to be increased. Four or six pills given at once generally excite purging.

498. '*Pilulae opiatæ: olim, pilulae thebaicæ*. Opiate pills.—'Take of opium, one part; extract of liquorice, seven parts; Jamaica pepper, two parts. Mix the opium and the extract separately, softened with diluted alcohol, and beat them into a pulp; then add the Jamaica pepper rubbed to powder, and, beating them well, reduce them to a mass.' This affords a form under which the exhibition of opium may be concealed from the patient. Two pills contain one grain of opium. In the formula of the London College, the aromatic is omitted, and the proportion of opium increased; so that each pill contains one grain.

499. '*Pilulae rhei compositæ*. Compound pills of rhubarb.—'Take of the root of rhubarb, one ounce; socotorine aloes, six drachms; myrrh, half an ounce; oil of peppermint half a drachm. Beat them into a mass with syrup of orange peel.' This is a moderate laxative much employed, especially in dyspeptic affections, to obviate costiveness, and stimulate gently the stomach and intestines. Two pills are taken at bed-time.

500. '*Pilulae scilliticæ*. Squill pills.—'Take of the dried root of squill, rubbed to a fine powder, one scruple; gum ammonia, smaller cardamom seeds, in powder, extract of liquorice, of each one drachm. Beat them with simple syrup into a mass.' Under this form squill is often given as an expectorant in asthma and chronic catarrh. Two pills are taken twice a-day.

• SECT. XXIV. TROCHISCI.—TROCHES.

501. 'TROCHES, or lozenges, consist of powders brought to a solid form by the addition of mucilage. When moist, they form a soft paste, in which state they are cut into small square or round pieces, and these are hardened by drying. It is a form adapted principally to such medicines as are designed to dissolve slowly in the mouth; and hence they are always rendered pleasant by the addition of a large proportion of sugar. They are seldom active remedies.

502. '*Trochisci carbonatis calcis*. Troches of carbonat of lime.—'Take of prepared carbonat

of lime, four ounces; gum arabic, one ounce; nutmeg, one drachm; refined sugar, 6 ounces. Rub these to powder, and make it into a mass with water, fit for forming troches.' This is a pleasant form under which carbonat of lime may be given as an antacid. The London College, in their formula, order cinnamon instead of nutmeg.

503. '*Trochisci glycyrrhinae*. Liquorice troches. 'Take of extract of liquorice, gum arabic, of each one part; refined sugar, two parts. Let them be dissolved in warm water, and strained. Then evaporate the solution, with a gentle heat, into a mass, which form into troches.' These, from their demulcent quality, may be used to allay coughing, in catarrh; but the simple extract of liquorice is equally effectual, and they are scarcely ever used.

504. '*Trochisci glycyrrhinae cum opio*. Liquorice troches with opium.—Take of opium, two drachms; tincture of tolu balsam, half an ounce; simple syrup, eight ounces; extract of liquorice, softened with warm water, gum arabic, in powder, of each five ounces. First, rub the opium with the tincture; then add gradually the syrup and the extract; afterwards sprinkle in the powder of gum arabic; and, lastly, dry the mass, that it may be formed into troches, each weighing ten grains.' These troches are very effectual in relieving the tickling cough frequently attending catarrh. The opium is the active ingredient; the others cover its taste and flavour, and render the composition pleasant, adding at the same time a demulcent quality. One drachm, or six troches, contain one grain of opium; and from 6 to 12 may be taken in 24 hours.

505. '*Trochisci gummasi*. Gum troches.—Take of gum arabic, four parts; starch, one part; refined sugar, twelve parts. These being powdered, are to be formed into a mass, with rose water, fit for forming troches.' This composition is designed as a demulcent, but is not in use; gum arabic, when pure, answering the same purpose equally well.

506. '*Trochisci nitratis potassae*. 'Troches of nitrat of potash.—Take of nitrat of potash, one part; refined sugar, three parts. Beat them to powder, and, with mucilage of gum tragacanth, make them into a mass proper for forming troches.' Under this form, nitrat of potash is sometimes used as a refrigerant in angina tonsillaris, and to allay the sense of heat attending salivation.

507. '*Trochisci amyli*. Starch troches. Pharm. Lond.—Take of starch, one ounce and a half; liquorice, six drachms; florentine orris, half an ounce; refined sugar, one pound and a half. Rub these to powder, and, with mucilage of tragacanth, form troches. They may be made without the orris.' These troches may exert some demulcent power in catarrh; but they are little in use.

508. '*Trochisci magnesia*. Magnesia troches. Pharm. Lond.—Take of burnt magnesia, four ounces; refined sugar, two ounces; ginger, in powder, one scruple. Rub them together, and, adding mucilage of gum arabic, form them into

troches.' This is a pleasant form for giving magnesia as an antacid.

509. '*Trochisci sulphuris*. Sulphur troches.—Pharm. Lond.—Take of washed flowers of sulphur, two ounces; refined sugar, four ounces; mucilage of quince seeds, *q. s.* Rub them together, and form troches.' This is an agreeable form for the exhibition of sulphur.

SECT. XXV. LINIMENTA, UNGUENTA, & CERATA.—LINIMENTS, OINTMENTS, and CERATES.

510. 'THESE are similar forms, consisting of unctuous matters, and differing merely in the degree of consistence. A liniment is of the consistence of thin honey; an ointment is firmer; and a cerate still harder. Oil or lard is their common basis; the due consistence is given by wax or spermaceti, and to the composition may be added any substance which is to be used under this form. The following general directions are given in the Edinburgh Pharmacopœia for their preparation: 'In making these compositions, fat and resinous substances are to be melted with a gentle heat, stirring them constantly, sprinkling in, at the same time, dry ingredients, if there are any, in fine powder, until the mixture, by cooling, become stiff.'

511. '*Linimentum simplex*. Simple liniment.—Take of olive oil, four parts; white wax, one part.

512. '*Unguentum simplex*. Simple ointment.—Take of olive oil, five parts; white wax, two parts.'

513. '*Ceratum simplex*. Simple cerate.—Take of olive oil, six parts; white wax, three parts; spermaceti, one part.' These compositions differ merely in consistence. They are applied spread on linen, as usual dressings to slight wounds and excoriations.

514. '*Unguentum adipis suillae*. Ointment of hog's lard. Pharm. Lond.—Take of prepared hogs lard, two pounds; rose water, three ounces. Beat the lard with the rose water until they are mixed; then liquefy with a gentle heat, and put it aside, that the water may subside. Afterwards pour off the ointment, stirring it constantly until it has cooled.' This is similar to the preceding, and is used for the same purposes. It is perhaps more liable to become rancid.

515. '*Unguentum resinosum*. Resinous ointment.—Take of hogs lard, eight parts; white resin, five parts; yellow wax, two parts.' This is more stimulating than the preceding, and is used as a dressing where the object is to promote suppuration.

516. '*Unguentum pulveris meloes vesicatorii olim, unguentum epispasticum fortius*. Ointment of the powder of cantharides.—Take of resinous ointment, 7 parts; powder of cantharides, one part.' This is the ointment commonly employed to establish a purulent discharge, or form an issue in the part to which a blister has been applied; which it does from the acrid and stimulating quality of the cantharides.

517. '*Unguentum infusi meloes vesicatorii olim, unguentum epispasticum mitius*. Ointment of infused

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sion of cantharides.—‘Take of cantharides, white resin, yellow wax, of each one part; Venice turpentine, hogs lard, of each two parts; boiling water, four parts. Macerate the cantharides in the water for a night, and strain the liquor, pressing it strongly; having added the lard, boil the liquor till the water is evaporated; then add the wax and resin. These being melted and removed from the fire, add the turpentine.’ The ointment with the powder of cantharides sometimes occasions too much pain and irritation. In such cases, the ointment from the infusion of cantharides being milder, is employed, and is still sufficiently stimulating to keep up the purulent discharge.

518. ‘*Unguentum sub-acetitis cupri; olim, unguentum œruginis.* Ointment of sub-acetite of copper, or verdigris.—‘Take of resinous ointment, fifteen parts; sub-acetite of copper, one part.’ This ointment is used as an escharotic, applied to foul ulcers. It in general requires to be mixed with an additional proportion of resinous or simple ointment.

519. ‘*Unguentum hydrargyri; vulgo, unguentum caruleum.* Ointment of quicksilver.—‘Take of quicksilver, mutton suet, of each one part; hogs lard, three parts. Rub them carefully in a mortar, until the globules of quicksilver disappear. It may be made also with a double or triple proportion of quicksilver.’

520. ‘*Unguentum hydrargyri fortius.* Stronger ointment of quicksilver. Pharm. Lond.—‘Take of purified quicksilver, two pounds; prepared hogs lard, 23 ounces; prepared tallow 1 ounce. Rub first the quicksilver with the tallow and a little lard, until the globules disappear; then add the remaining lard, so as to form an ointment.’

521. ‘*Unguentum hydrargyri mitius.* Milder ointment of quicksilver. Pharm. Lond.—‘Take of the stronger ointment of quicksilver, one part; prepared hogs lard, two parts. Mix them.’

522. ‘Mercurial ointment is the form under which mercury is introduced into the system by external friction. One drachm of the *strong ointment*, (that containing equal parts of mercury and lard), is introduced by friction in the evening, and frequently also in the morning, until the system is affected. The weaker ointments ought not to be employed, as they merely give unnecessary trouble, by the necessity of rubbing in so much lard.

523. ‘*Unguentum oxidi hydrargyri cinerei.* Ointment of grey oxyd of quicksilver.—‘Take of grey oxyd of quicksilver, one part; hogs lard, three parts.’ This is designed as a substitute for the mercurial ointment, and, as the quicksilver is fully oxydated, it has been supposed that it will prove more active.

524. ‘*Unguentum oxidi hydrargyri rubri.* Ointment of red oxyd of quicksilver.—‘Take of red oxyd of quicksilver by nitric acid, one part; hogs lard, 8 parts.’ This is applied as a mild escharotic to remove the diseased surface of ulcers, and as a stimulant to promote suppuration.

525. ‘*Unguentum calcis hydrargyri albae.* Ointment of white calx of quicksilver. Pharm. Lond.—‘Take of white oxyd of quicksilver, 1 drachm;

ointment of hogs lard, one ounce and a half. Mix them so as to form an ointment. This ointment is sometimes used as an application in psoa, and other cutaneous affections.

526. ‘*Unguentum nitratis hydrargyri fortius; vulgo, unguentum citrinum.* Stronger ointment of nitrat of quicksilver.—‘Take of purified quicksilver, one part; nitrous acid, two parts; hogs lard, twelve parts. Digest the quicksilver with the nitrous acid, in a sand-bath, until a solution is obtained, which, while it is hot, is to be mixed with the hogs lard melted and beginning to cool. Beat the mixture thoroughly in a glass mortar, so as to form an ointment.’ This is an excellent application to certain cutaneous affections, a small quantity being rubbed on the part.

527. ‘*Unguentum nitratis hydrargyri mitius.* Milder ointment of nitrat of quicksilver.—‘This is made in the same manner as the preceding, with a triple proportion of lard.’ It is of course a much milder application, and is designed to be also of a softer consistence; but, to obtain the latter convenience, it is better to reduce the strong ointment with the requisite proportion of lard.

528. ‘*Unguentum acidi nitrosi.* Ointment of nitrous acid.—‘Take of hogs lard, one pound; nitrous acid, six drachms. Mix the acid gradually with the melted lard, and beat the mixture thoroughly while it cools.’ In this preparation part of the acid is decomposed, and part of it combined with the lard. It is designed as an application in cutaneous affections, and is similar in its effects to the preceding.

529. ‘*Unguentum oxidi plumbi albi.* Ointment of white oxyd of lead.—‘Take of simple ointment, five parts; oxyd of lead, one part.’ This has been used principally as an application to buras and superficial inflammation.

530. ‘*Unguentum acetitis plumbi; vulgo, unguentum futurinum.* Ointment of acetite of lead.—‘Take of simple ointment, 20 parts; acetite of lead one part.’ This ointment is applied to the same purposes as the preceding, and is more frequently used.

531. ‘*Ceratum lithargyri acetati compositum.* Compound cerate of acetated litharge. Pharm. Lond.—‘Take of water of acetated litharge, two ounces and a half; yellow wax, four ounces; olive oil, nine ounces; camphor, half a drachm. Rub the camphor with a little of the oil. Melt the wax with the remaining oil, and as soon as the mixture begins to become thick, pour on gradually the water of acetated litharge and stir constantly until the mixture has cooled; then mix with it the camphor rubbed with the oil.’ This ointment, usually named *Goulard’s Cerate*, differs little from the preceding, and is applied to similar uses.

532. ‘*Ceratum carbonatis zinci impuri; olim, ceratum lapidis calaminaris.* Cerate of impure carbonat of zinc.—‘Take of simple cerate 5 parts; prepared impure carbonat of zinc, one part.’ This is the common healing cerate applied to slight wounds, excoriations, &c.; and as a dressing to ulcers. The carbonat of zinc seems to give it merely a stiffer consistence.

533. ‘*Unguentum oxidi zinci impuri; olim, unguentum*

guentum tutiae. Ointment of tutty.—‘Take of simple liniment, five parts; prepared impure oxyd of zinc, one part.’ This has been used principally as an application in chronic ophthalmia.

534. ‘*Unguentum oxidi zinci.* Ointment of oxyd of zinc.—‘Take of simple liniment, six parts; oxyd of zinc, one part.’ Ointment of oxyd of zinc is sometimes used as a dressing to ulcers, and sometimes as an application in ophthalmia.

535. ‘*Unguentum picis.* Ointment of tar.—‘Take of tar, five parts; yellow wax, two parts.’ This stimulating ointment is sometimes applied to foul ulcers, and has been also used with advantage in tinea capitis.

536. ‘*Unguentum sulphuris.* Ointment of sulphur.—‘Take of hogs lard, four parts; sublimed sulphur, one part. To each pound of this ointment, add of essential oil of lemon, or essential oil of lavender, half a drachm.’ Under this form, sulphur is applied, by friction, as a remedy in psora.

537. ‘*Unguentum elemi compositum.* Compound ointment of elemi. Pharm. Lond.—‘Take of elemi, one pound; common turpentine, ten ounces; prepared suet, two pounds; olive oil, two ounces. Melt the elemi with the suet, and having removed it from the fire, mix it immediately with the turpentine and oil; then strain the mixture.’ This ointment is moderately stimulating, somewhat similar to the resinous ointment.

538. ‘*Unguentum hellebori albi.* Ointment of white hellebore. Pharm. Lond.—‘Take of white hellebore, rubbed to powder, one ounce; ointment of hogs lard, four ounces; essence of lemon, half a scruple. Mix them, so as to form an ointment.’ Hellebore is used, under this form, as an application to psora. It is sometimes effectual, and is less disagreeable than the sulphur ointment.

539. ‘*Unguentum sambuci.* Ointment of elder. Pharm. Lond.—‘Take of the flowers of elder, 4 lb.; prepared mutton suet, 3 lb.; olive oil, 1 lb. Boil the flowers of elder with the suet and the olive oil until they become friable; then press out the fluid, and strain it.’ The elder flowers communicate nothing to the unctuous matter, but a rich green colour.

540. ‘*Ceratum saponis.* Cerate of soap. Pharm. Lond.—‘Take of soap, 8 oz.; yellow wax, 10 oz.; litharge, in powder, 1 lb.; olive oil, 1 lb.; vinegar, one gallon. Boil the vinegar with the litharge on a gentle fire, stirring constantly until the mixture become uniform and thick; then mix with it the other ingredients, so as to form a cerate.’ This composition must derive its efficacy principally from the acetate of lead, formed by the boiling of the vinegar on the litharge.

SECT. XXVI. EMPLASTRA.—PLASTERS.

541. ‘PLASTERS differ from ointments in their much firmer consistence, which is such that they do not adhere to the hand, and require to be heated in order to be spread. They owe this consistence, in general, to a larger proportion of wax, or sometimes to the addition of certain metallic oxyds, particularly those of lead, which

unite chemically with the unctuous matter. The same rules are to be observed in their preparation, as in that of ointments.

542. ‘*Emplastrum simplex: olim, emplastrum cereum.* Simple plaster.—‘Take of yellow wax, three parts; mutton suet and resin, of each two parts.’ The principal use of this plaster is as a dressing, when spread thin on linen, to the part to which a blister has been applied.

543. ‘*Emplastrum oxidi plumbi semi-vitrei: olim, emplastrum commune.*—‘Take of the semi-vitreous oxyd of lead, one part; olive oil, two parts. Having added water, boil them, stirring constantly, until the oil and the oxyd unite into a plaster.’ This is a chemical combination of the oil with the oxyd of lead, and is of a consistence sufficiently hard to form a plaster. It is used, spread on leather or linen, as an application to excoriations, or slight wounds.

544. ‘*Emplastrum resinosum: olim, emplastrum adhaesivum.* Resinous plaster.—‘Take of plaster of semi-vitreous oxyd of lead, five parts; resin, one part.’ The plaster of litharge is rendered more adhesive, and somewhat stimulating, by this intermixture of resin.

545. ‘*Emplastrum oxidi ferri rubri: olim, emplastrum roborans.* Strengthening plaster.—‘Take of plaster of semi-vitreous oxyd of lead, 24 parts; resin, six parts; yellow wax, olive oil, of each three parts; red oxyd of iron, 8 parts. Rub the red oxyd of iron with the oil, and add it to the other ingredients melted.’ This, spread on leather, is sometimes used as an application in slight cases of lumbago, and seems to prove useful, merely by affording a mechanical support.

546. ‘*Emplastrum affusae fetidae.* Assaetida plaster.—‘Take of plaster of semi-vitreous oxyd of lead, assaetida, galbanum, yellow wax, of each one part.’ This plaster is sometimes applied to the breast or side, as a remedy in hysterical affections.

547. ‘*Emplastrum gummosum.* Gum plaster.—‘Take of plaster of semi-vitreous oxyd of lead, 8 parts; ammoniac, galbanum, yellow wax, of each one part.’ This plaster has been used as an application to indolent tumours, and sometimes to promote suppuration.

548. ‘*Emplastrum hydrargyri.* Quicksilver plaster.—‘Take olive oil, resin, of each one part; quicksilver, three parts; plaster of semi-vitreous oxyd of lead, six parts. Rub the quicksilver with the oil and resin melted together, and then cooled, until the globules disappear; then add, gradually, the plaster of semi-vitreous oxyd of lead, melted, and mix the whole carefully.’ This plaster is applied as a discutient to indolent tumours.

549. ‘*Emplastrum saponaceum.* Soap plaster.—‘Take of plaster of semi-vitreous oxyd of lead, 4 parts; gum plaster, two parts; soap sliced, one part. Mix the soap with the plasters melted together; then boil a little, so as to form a plaster.’ This is much inferior to the mercurial plaster, and is scarcely ever used.

550. ‘*Emplastrum meloe vesicatorii: olim, emplastrum vesicatorium.* Plaster of cantharides. Blistering plaster.—‘Take of mutton suet, yellow wax, resin, cantharides, of each equal weights. Mix the cantharides, rubbed into a fine powder,

with

with the other ingredients, melted together, and removed from the fire.' This is the plaster usually employed to raise a blister. It is of a softer consistence than the other plasters, that it may admit of being spread without the assistance of heat, which would impair the acrid quality of the cantharides. It requires to be applied 12 hours to produce a perfect blister: it is then removed; the vesicle is cut, and the inflamed surface dressed with simple cerate or plaster.

551. '*Emplastrum meloe vesicatorii compositum*. Compound plaster of cantharides.—'Take of Burgundy pitch, turpentine, cantharides, of each 12 parts; yellow wax four parts; sub-acetite of copper, two parts; mustard seed, black pepper, of each one part. To the Burgundy pitch and wax melted, add the turpentine. When this is melted, and while the fluid is still warm, add the other ingredients mixed and rubbed to a fine powder, stirring constantly, so as to form a plaster.' It occasionally happens, that the common plaster of cantharides is insufficient to excite a blister, even when its surface has been sprinkled over with powdered cantharides. In such cases, or even in others, where it is necessary that a blister should be quickly raised, this powerful composition may be employed. Its operation is accompanied with a very pungent sensation of heat.

552. '*Emplastrum ammoniaci cum hydrargyro*. Plaster of Ammoniac with quicksilver. *Pharm. Lond.*—'Take of strained ammoniac, 1 lb. Purified quicksilver, 3 oz.; sulphurated oil, one drachm, or *q. s.* Rub the quicksilver with the sulphurated oil, until the globules disappear; then add gradually the melted ammoniac, and mix them.' This is similar in its powers to the simple mercurial plaster, and is applied to the same purposes.

553. '*Emplastrum cumini*. Cumin plaster, *Pharm. Lond.*—'Take of cumin, caraway, bay berries, of each 3 oz.; Burgundy pitch, 3 lb.; yellow wax, 3 oz. With the pitch and wax melted, mix the other ingredients rubbed to powder.' This has been applied to the region of the stomach as a moderate stimulant with no great effect.

554. '*Emplastrum ladani compositum*. Compound plaster of ladanum. *Pharm. Lond.*—'Take of ladanum, 3 oz.; frankincense, one ounce; cinnamon in powder, expressed oil of nutmeg, of each half an ounce; oil of spearmint, one drachm. To the melted frankincense add first the ladanum softened by heat, then the expressed oil of nutmeg; afterwards mix these and the cinnamon with the oil of spearmint, and beat them in a warm mortar. Keep the plaster in a close vessel.' This plaster has been applied, like the former, to relieve a nausea and flatulence, and is undoubtedly a more powerful stimulant.

555. '*Emplastrum lithargyri compositum*. Compound litharge plaster. *Pharm. Lond.*—'Take of litharge plaster, 3 lb.; strained galbanum, 8 oz. Mix the frankincense, rubbed to powder, with the galbanum and turpentine melted, and add the litharge plaster, melted with a slow fire.' This is similar in its qualities to the gum plaster, and is used, like it, as a discutient, and to promote suppuration.

556. '*Emplastrum picis Burgundicae compositum*. Compound Burgundy pitch plaster. *Pharm. Lond.*—'Take of Burgundy pitch, 2 lb.; ladanum, 1 lb.; yellow resin, yellow wax, of each 4 oz.; expressed oil of nutmeg, 1 oz. To the pitch, resin and wax, melted together, add first the ladanum, then the oil of nutmeg.' Burgundy pitch, with the addition of a little wax to give it more tenacity, is in common use as a rubefacient, under the form of plaster. The addition of the other ingredients of this compound plaster, may render it rather more stimulating.

557. '*Emplastrum thuris compositum*. Compound frankincense plaster. *Pharm. Lond.*—'Take of frankincense, half a pound; dragons blood, 3 oz.; litharge plaster, 2 lb. To the litharge plaster, add the others rubbed to powder.' This is similar to the plaster of red oxyd of iron of the *Edin. Pharmacopoeia*, and is applied to the same uses.

SECT. XXVII. CATAPLASMATA. CATAPLASMS.

558. '*Cataplasmata aluminis*. Alum cataplasm. *Pharm. Lond.*—'Take the whites of two eggs: agitate them with a piece of alum, until a coagulum is formed.' This is sometimes employed as an astringent application in some cases of ophthalmia.

559. '*Cataplasmata cumini*. Cumin cataplasm. *Pharm. Lond.*—'Take of cumin, 1 lb.; bay berries, dried scordium, Virginian snake root, of each 3 oz.; cloves, 1 oz. Rub them all together into powder; and having added three times their weight of honey, form a cataplasm.'—This has been used as a stimulating cataplasm to parts shewing a disposition to gangrene.

560. '*Cataplasmata sinapios*. Mustard cataplasm. *Pharm. Lond.*—'Take of mustard in powder, crumb of bread, of each half a pound; vinegar, warm, as much as is sufficient. Mix so as to make a cataplasm.' This is the common sinapism which is applied with advantage, as a powerful stimulant, to the soles of the feet, in typhus where there is a determination to the head, and in comatose affections.

561. Having thus laid before our readers the substance of Mr Murray's ingenious Treatise on Pharmacy, we shall conclude with a few extracts from his two appendices; wherein he treats of the GASES, ELECTRICITY, and GALVANISM; and of MEDICAL PRESCRIPTIONS.

APPENDIX.

SECT. I. Of the GASES employed as REMEDIES.

562. 'SUBSTANCES existing in the aerial form,' (says our author,) 'might *a priori* be supposed capable of producing important effects on the system, as by respiration they are brought to act directly on the mass of blood, and induce it in chemical changes. And they actually occasion immediate and striking alterations in the functions of life.

563. 'Though the expectations that were at one time formed, with regard to their medicinal efficacy, have not been realized, and the use of them has now been nearly relinquished; yet since they are capable of producing important changes in the state of the functions, and of the general system,

system, and since the proposition must be admitted, that every substance possessed of such powers may be capable of acting as a powerful remedy, they ought not to be entirely lost sight of, or be discarded from the materia medica. In the aerial kingdom, we have actually the two extremes of stimulant and sedative power.

564. 'The modes of preparing these gases are, in a great measure, peculiar to each of them. The manner of administering them is nearly the same. They may be breathed from a jar placed in water: but this is difficult, from the effort required to sustain the column of water within the jar. This may be partly remedied, by passing the jar in water, or, more completely, by breathing from the gazometer. But the easiest mode is, for the patient to breathe the gas from a silk bag, to which a tube with a stop-cock is affixed. In inspiring and expiring the gas, the nostrils require to be closed.

563. 'The gases that have been employed in medicine, may be considered under the divisions of those which *excite*, and those which *depress* the functions of life. To the former order belong,

'*Gas oxygenium*. Oxygen gas.

'*Gas oxydum nitrosum*. Nitrous oxyd gas.

566. 'Oxygen gas is procured from black oxyd of manganese by heat.' (See OXYGEN, § 2.) For medicinal purposes the gas is transmitted through water, and is allowed to stand over it for some hours before it is breathed.

567. 'As oxygen is so immediately necessary to the support of life, it might be supposed, that when afforded in a more pure and concentrated state than that in which we breathe it in atmospheric air, it would prove a salutary agent of no inconsiderable power. To this interference, however, independent of any experience, an objection occurs, founded on some experiments made by Lavoisier, and repeated by Davy, which prove, that when animals are supplied with pure oxygen, or with oxygen mixed with a portion of atmospheric air, still less of it is consumed than in ordinary respiration. But though this fact should be admitted, the greater activity of pure oxygen gas on the system is undoubted. It is shewn by the effects which result from its inspiration, and still more forcibly by the fact ascertained by Priestley, Lavoisier, and Davy, that animals confined in air, with an increased proportion of oxygen, die before it is exhausted, and even while the air which they breathe contains more oxygen than common air, and can enable another animal to live.

568. 'Oxygen, when respired, acts partly by communicating a stimulating quality to the blood, by which the left side of the heart and the arterial system are excited to action. The phenomena of apnoea from its abstraction, prove that it likewise exerts some other operation more immediately subservient to the functions of life.

569. 'The diseases in which oxygen gas has been administered, are principally those of chronic debility, chlorosis, asthma, scrofula, dropsy, paralysis, and some cutaneous affections. It requires to be diluted with from 10 to 20 or more parts of atmospheric air, increasing the propor-

tion of oxygen according to the effects produced. From one to two quarts of oxygen are given, by breathing it in its diluted state, at intervals, in the course of the day. It generally increases the force and velocity of the pulse.

570. '*Nitrous oxyd gas*. This gas, a compound of oxygen and azot, in the proportion of 37 of the former to 63 of the latter, is most economically obtained, and in greatest purity, from the decomposition of nitrat of ammonia by heat. When this salt is exposed to a temperature, about 400° Fahrenheit's scale, its principles re-act on each other, and enter into new combinations. The hydrogen of the ammonia attracts part of the oxygen of the nitric acid to form water; and the remaining oxygen combining with the azot both of the acid and of the ammonia, forms this particular compound, nitrous oxyd, which is disengaged in the gaseous form. It requires to stand some hours to deposit a small portion of saline matter, before it is fit to be breathed.

571. 'The effects of nitrous oxyd gas on the system, when it is respired, are scarcely analogous to those of any other agent. The excitement which it produces is extended to the functions of body and mind with more rapidity and force than that arising from the action of the most powerful stimulants. It is accompanied with sensations as various as they are peculiar; and, what still more makes the singularity of its operation, this high excitement of the functions of life and exhilaration of mind are not followed by proportional languor or debility; the state of the system gradually returns to the healthy standard, without any apparent waste of power. A substance capable of acting in such a manner, we might suppose, would prove one of our most valuable remedies. The transient nature of its operation must undoubtedly limit its medicinal efficacy; but still, in diseases of extreme debility, we seem justified in expecting from its administration the most beneficial effects. It has not, however, been very extensively employed. In paralysis it has been used with advantage. In diseases of increased sensibility, it may prove hurtful; and when breathed by delicate females, it has, in more than one instance, induced hysterical affections. The dose which is requisite to produce its peculiar effects varies from four to nine quarts, which may be breathed pure or diluted with an equal part of atmospheric air. It cannot be breathed undiluted for more than four minutes and a half, insensibility being induced.

572. 'Nothing satisfactory can be said as to its mode of action, since we know so little of the connection which subsists between the phenomena of life and the chemical changes which go on in the system. We can only mark the dissimilarity of its operation to that of any other physical agent.

573. 'Under the second sub-division of the Gases,—those which depress the functions of life, might probably be placed all the substances existing in the aerial form, oxygen and nitrous oxyd excepted. The following are those which have been medicinally employed;

'*Gas hydrogenium*. Hydrogen gas.

'*Gas azoticum*. Azotic gas.

• 'Gas

'*Gas acidum carbonicum.* Carbonic acid gas.

'*Gas hydrogenium carbonatum.* Carbonated hydrogen gas.

574. 'Hydrogen gas, when it is to be breathed, is to be procured by passing water in vapour over pure iron heated to the temperature of ignition. The iron attracts the oxygen of the water, and the hydrogen assumes the aerial form.' (See CHEMISTRY, *Index*.) 'Hydrogen gas received into the lungs does not appear to exert any positive deleterious power: all its effects seem referable merely to the exclusion of oxygen. In a pure state, if the lungs have been previously emptied as much as possible of atmospheric air, it cannot be breathed above three quarters of a minute. It quickly occasions a giddiness and sense of suffocation; the countenance becomes livid, and the pulse sinks rapidly; but, when diluted with two thirds or an equal part of atmospheric air, it can be safely breathed; nor does it appear to produce any very important effect. It occasions some diminution of muscular power and sensibility, and a reduction of the force of the circulation. It has been used in catarrh, hæmoptysis, and phthisis, but its powers seem merely those of a palliative.

575. 'Azot.—What has been said of hydrogen applies likewise to azot. It seems to exert no positive action on the system, but to produce its effects by excluding oxygen. As it is not so easily obtained pure as hydrogen, it has been less employed.

576. 'Carbonic acid gas.—To obtain this gas in a proper state of purity for breathing, carbonate of lime (chalk or white marble), is exposed to a strong red heat in an iron tube. The carbonic acid which is disengaged is collected over water, as it is not immediately largely absorbed by that fluid.' See CHEMISTRY, *Index*.

577. 'This acid gas, when it is inspired, proves more speedily fatal than azot or hydrogen. It appears to excite spasmodic contraction of the epiglottis, so as very speedily to induce suffocation; and it has this effect, even when diluted with nearly an equal part of atmospheric air. The respiration of carbonic acid gas was employed at an earlier period than that of the other gases. It was celebrated as a remedy in phthisis. In the many cases however in which it has been tried, though it might lessen the expectoration, diminish the hectic fever, and act as an anodyne, there is little evidence of its having ultimately effected a cure. It is given diluted with four or six parts of atmospheric air.

578. 'Carbonic acid has likewise been employed as a local application to cancer and painful ulceration, and has at least been serviceable as a palliative. A stream of it is directed on the part by means of a flexible tube. A cataplasm, formed of substances in a state of fermentation has, in some measure, a similar effect.

579. 'Carbonated hydrogen gas.—The gas which has been used in medicine under this name, is obtained by passing the vapour of water over charcoal at the temperature of ignition, in an iron tube. The oxygen of the water unites with one part of the charcoal, forming carbonic acid; the hydrogen combines with another part of it, and forms this species of carbonated hydrogen. The

carbonic acid is abstracted by agitating the gas in lime-water. This is the most active of those gases which operate by depressing the functions of life, and is perhaps the most powerful agent of this kind. Even when largely diluted with atmospheric air, it occasions immediate vertigo, sickness, diminution of the force and velocity of the pulse, reduction of muscular vigour, and in general every symptom of diminished power. It can scarcely be breathed in an undiluted state. Mr Davy found, that at the third inspiration, total insensibility was induced, and symptoms of extreme debility continued for a considerable time.

580. 'As a medicinal agent, it is the gas of which the evidence in favour of its efficacy is greatest. In phthisis, in many cases, it unequivocally relieved the symptoms, and at least arrested the progress of the disease. Much caution is requisite with regard to the dose. At first, one pint of the carbonated hydrogen gas, diluted with twenty parts of atmospheric air, may be resorted; the quantity may be slowly increased, and with less dilution, taking care to avoid the production of great vertigo or muscular debility. Not more than from two to four quarts can be taken in the day, even when the patient has been accustomed to it for some time. It is always more powerful when recently prepared, than when it has been kept for some days.

SECT. II. Of ELECTRICITY.

581. 'The medicinal operation of electricity may be referred to its stimulant power. It produces forcible contractions in the irritable fibre; excites therefore to action, if duly applied; and, when in excess, immediately exhausts irritability. It possesses the important advantages of being easily brought to act locally, and of being confined to the part to which it is applied, while it can also be employed in every degree of force.

582. 'Electricity is applied to the body under the form of a stream or continued discharge of the fluid, under that of sparks, and under that of a shock; the first being the most gentle, the second being more active, and the last being much more powerful than either of the others. The stream is applied by connecting a pointed piece of wood, or a metal wire, with the prime conductor of the electrical machine, and holding it by a glass handle one or two inches distant from the part to which it is to be directed. A very moderate stimulant operation is thus excited, which is better adapted to some particular cases than the more powerful spark or shock. The spark is drawn by placing the patient on the insulated stool connected with the prime conductor, and, while the machine is worked, bringing a metal knob within a short distance of the part from which the spark is to be taken. A sensation somewhat pungent is excited, and slight muscular contractions may be produced; these effects being greater or less, according to the distance at which the knob is held, if the machine be sufficiently powerful. The shock is given by discharging the Leyden phial, making the part of the body through which it is intended to be transmitted, part of the circuit. The sensation it excites is unpleasant, and the muscular contractions considerable, if the shock is moderately strong.

583. 'At the first introduction of electricity as a remedy, it was very highly celebrated for its efficacy in a number of diseases.' (See *ELECTRICITY*, Part IV.) 'Its use is now confined to a few. In paralysis it is very generally had recourse to, to excite muscular contraction, and perhaps with some advantage. It is usually applied under the form of sparks, the application of it requiring to be continued daily for a considerable time. Sometimes moderate shocks are also employed; but the propriety of this practice is somewhat doubtful. In amenorrhœa, as the stimulant operation can be excited, in some measure, in the vessels which are affected, advantage may be derived from electricity; and it is occasionally used, both under the form of sparks taken from the pelvis, and that of moderate shocks transmitted through it. Ophthalmia, and some other varieties of inflammation, have been removed by the electric stream; it has also sometimes succeeded in discussing tumours, and relieving pain. The general rule for the medical employment of electricity, is to apply it at first under the milder forms, and gradually to raise it, if necessary, to the more powerful.

SECT. III. Of GALVANISM.

584. 'The peculiar power which is generated when two metals moistened are in contact, at first named *Animal Electricity*, since *Galvanism*, has been recently applied as a remedy in various morbid affections. Its effects on the animal system are such as warrant this application. Its activity is shewn by its exciting strong sensations in sensible parts, and powerful contractions in parts endowed with irritability.' See *ELECTRICITY*, Part V.

585. 'Between galvanism and electricity there are so many points of resemblance, that they have been considered as ultimately the same power, or as the same subtle matter in different states. Whether this opinion be just or not, the effects of galvanism on living matter are different from those of electricity. The sensation which the former excites, though somewhat analogous to that produced by the latter, is still dissimilar; the action of galvanism is more extended, both to the nervous and muscular systems, than that of electricity, which is more local in its action. The galvanic excitation produces sensations and contractions in parts, which, from disease, are not sensible to electrical impressions; and the stimulant power which both exert, appears in galvanism to be greater in proportion to its intensity than in electricity; or the sensations and muscular contractions which the galvanic discharge excites, are more than proportioned to its power of producing electrical phenomena.

586. 'The diseases in which galvanism has hitherto been employed, are principally those of the nervous kind. In paralysis, it has been affirmed to have restored the capability of muscular contraction, and consequently the power of motion. Cases of chorea, tetanus, and some other spasmodic affections, have been related, in which perfect cures were accomplished by its application. It appears, in several instances, to have relieved deafness, particularly that species of it arising from torpor of the auditory nerve; and it has been successful in discussing indolent tumours.

587. 'Galvanism is applied by connecting two metallic wires with the two extremities of a galvanic battery, and bringing them in contact with the part affected, so that it shall form part of the circuit of the galvanic discharge: the one wire is kept in contact with the part it touches; the other is alternately applied for a moment and removed. If the skin is moistened, the galvanic influence is communicated more readily and effectually; and still more so if a small piece of metallic leaf be laid on the parts to which the wires are applied. Sometimes even the cuticle has been previously removed by a blister; but the application of the galvanism is then attended with pain.'

SECT. IV. Of MEDICAL PRESCRIPTIONS.

588. 'THE principal objects designed to be attained by the composition of medicines, are, to communicate an agreeable taste or flavour; to give a convenient form; to correct the operation of the principal medicine, or obviate some unpleasant symptom it is liable to produce; to promote its action, by the additional article exerting one of a similar kind; to obtain the joint operation of two remedies, having different powers; or to alter their usual effects, by the power which one may have of modifying the action of another.

589. 'A prescription has been usually divided into four parts, which compose it,—the *basis*, or principal article; the *adjuvans*, or that designed to promote the action of the former; the *corrigens*, or that which is intended to correct its operation, or obviate any unpleasant symptom which it may be apt to produce; and the *constituens*, or that which gives to other ingredients confidence or form. These are not necessarily present in every formula; nor is the division of much importance, except as perhaps affording the best principle for regulating the order in which the ingredients of a prescription should be enumerated.

590. 'The following are the principal circumstances to be attended to in forming a prescription.

591. '1st, Simplicity should be attained, as far as is consistent with the object of the prescription. Nothing ought to enter into the composition which does not add to its virtue, render it less ungrateful, give it a convenient form, or which is not necessary to conceal any particular ingredient; and, in general, the practice of accumulating a number of articles in one prescription is to be avoided.

592. '2^{dly}, Substances, it is evident, ought not to be mixed together, which are capable of entering into chemical combination, or of decomposing each other, unless it be with the view of obtaining the product of the combination, or decomposition, as a remedy.

593. '3^{dly}, Those mixtures are also to be avoided, in which one medicine, by its peculiar action on the stomach or general system, modifies and changes the action usually exerted by another, unless where the object is to obtain the effects of that modified operation.

594. '4^{thly}, The error of contra indication is to be guarded against; or those medicines ought not to be combined, the virtues of which are not merely different, but are, in some measure, opposed to each other.

595. ' *Stibly*. The ingredients which are to be mixed, must be such as will mix properly together, so that the form in which the remedy is designed to be exhibited may be easily obtained and preserved.

596. ' *Lasly*. The form under which a medicine is prescribed must be adapted to certain circumstances; principally to the nature of the disease, the nature of the remedy itself, and, as far as may be possible, to the taste of the patient.

597. ' The doses of medicines are not reducible to any general rules, from their general similarity of operation, or any other circumstance. The principal circumstances by which they are influenced are, age, sex, temperament, idiosyncrasy, habit, and disease.

598. ' *Age*.—From infancy to manhood, a larger dose of any medicine is requisite to produce its effect, in proportion to the advance in life. From manhood to old age, there is a similar gradation with regard to diminution of dose, though in a much less proportion than that which regulates the increase. The following table has been supposed to shew these proportions.

599. ' TABLE.	
' Let the dose for a person of middle age be	1 or 1 drachm.
For one from xiv to xxi years, it will be	or 2 scruples.
_____ vii to xiv	or half a dr.
_____ iv to vii	or 1 scruple.
_____ of iv years of age	or 15 grains.
_____ iii	or half a scr.
_____ ii	or 8 grains.
_____ i	or 5 grains.

600. ' *Sex*.—Women, in general, require smaller doses of any medicine than men, a difference probably owing to their greater sensibility, from their habits of life.

601. ' *Temperament*.—Those of the sanguine temperament are supposed to be more affected by medicines, and therefore to require smaller doses than those of the phlegmatic or melancholic; but in what has been said on this subject, there is so much uncertainty, that little reliance can be placed on it.

602. ' *Idiosyncrasy*.—This denotes that disposition in individuals to be affected by certain causes, in a manner different from the generality of mankind. Such idiosyncrasies are observed with regard to medicines, as well as to other agents; and, where they are known, require to be attended to by the prescriber.

603. ' *Habit*.—This has an important influence on the operation of medicines. In general, they lose some of their power by having been long continued. This is particularly the case with all strong stimulants and narcotics, and is even observed, to a certain extent, in some of the other classes of the materia medica. In a few instances, the reverse has been supposed to hold true.

604. ' *Disease*.—This has an influence on the doses of medicines not less important; the susceptibility to external impressions, and to action, being much varied in morbid affections, and the operations of remedies of course being modified by such variations. The state of susceptibility being

in general apparent, when it varies much from the healthy standard, the doses of the medicines administered are easily regulated.'

SECT. V. Of PHARMACEUTICAL OPERATIONS.

605. We cannot conclude without mentioning, that there are a number of PHARMACEUTICAL OPERATIONS, with which the student of pharmacy ought to be well acquainted. The phenomena upon which these depend, and which it is the object of Pharmaceutical Chemistry to investigate, arise principally from the exertion of that power, possessed by the particles of different kinds of matter, by which they tend to unite or combine with each other, and form one homogeneous substance, in which the particles of either can no longer be discovered.

606. The power whence this combination proceeds is termed *Chemical Attraction*, or *Affinity*. (See AFFINITY, ATTRACTION, and CHEMISTRY, *Index*.) It is exerted only between minute particles of different kinds of matter, and between these only at insensible distances. The substances which it combines never separate spontaneously; nor are they capable of being separated by any mechanical means; and they form a compound more or less different from those of their component parts. This change of properties from combinations is one of the most remarkable phenomena attending chemical attraction.

607. ' The operations of Pharmaceutical Chemistry (says Mr Murray) are entirely dependent on chemical attraction, or on the action of caloric. They are merely particular arrangements of circumstances, by which the exertion of the attraction is promoted, and the products of the combinations or decompositions, which take place, are obtained.

608. ' There are several preliminary operations, not directly chemical, but employed either to favour the exertion of chemical attraction, or to facilitate the medicinal operation of the substances subjected. They are those operations by which bodies are reduced to a state of extreme mechanical division. The principal are PULVERIZATION, or reducing bodies to powder by beating; TRITURATION, in which the same effect is obtained by rubbing; and LEVIGATION, in which the powder is reduced to a great degree of fineness, from the rubbing being continued longer, and being facilitated by the addition of any fluid which does not act chemically on the substance subjected to the operation. These are performed in mortars of glass, earthen ware, or metal. As the particles into which the substance is reduced by any of these means must necessarily be of unequal fineness, the coarser are separated from the finer by SIFTING, or passing the powder over a sieve. WASHING or ELUTRATION is an operation in which the same end is attained.'

609. ' Of the Chemical Operations, the most important are those by which that fluidity is obtained which is in general requisite for the exertion of chemical attraction. SOLUTION is the principal operation of this kind.' See that article, and CHEMISTRY, *Index*. See also CALCINATION, COMBUSTION, CRYSTALLIZATION, DECOCTION, DEFLAGRATION,

DEFLAGRATION; DIGESTION, DISTILLATION, EVAPORATION, EXTRACTION, LIXIVIATION, MACERATION, PRECIPITATION, SUBLIMATION, &c. in their order, and under CHEMISTRY.

610. An omission of several lines having accidentally taken place, in § 342, whereby Mr MURRAY's meaning is misrepresented, it is necessary here to insert the whole paragraph, as it stands in Mr Murray's ingenious Treatise, immediately following the paragraph we have marked § 341.

342. 'By exposing bones to heat, the gelatin they contain suffers decomposition; its principles

enter into new combinations, forming chiefly carbonat of ammonia and empyreumatic oil. These are the products of the above process; the carbonat of ammonia being partly dissolved by the water which distils over, and obtained partly in a concrete state. It is scarcely possible, however, to free it entirely from the empyreumatic oil, which renders it nauseous; and though at one time it was supposed to be possessed of some peculiar virtues, it is now justly rejected from practice; and the carbonat of ammonia, obtained pure by the preceding processes, is preferred.'

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P H A

P H A

PHARMECUSA, an island in the Ægean Sea, where Julius Cæsar was seized by pirates. *Suet. Cæf. 4.*

PHARMUTHI, in the ancient Egyptian chronology, one of the months of their year, answering to April in the Roman kalender.

PHARNABAZUS, the son of Pharnabazus, a satrap of Persia, and a general under Artaxerxes Longimanus. See PERSIA, § 12. He betrayed the celebrated Alcibiades to his enemies. He flourished about A. A. C. 409.

PHARNACE, a town of Pontus. *Plin. vi. 4.*

PHARNACES, the favourite son of Mithridates the Great, king of Pontus, who ungratefully rebelled against him, and caused him to kill himself. He was defeated by Cæsar, in the expeditious battle of which he wrote home to Rome, *Veni, Vidi, Vici*. Pharnaces was afterwards killed in another battle with the Romans. See PONTUS.

PHARNACEUM, in botany, a genus of the trigynia order, belonging to the pentandria class of plants; and in the natural method ranking under the 22d order, *Caryophyllee*.

PHARNAPATES, a general of the Parthians, under Orodes, who was killed in battle by the Romans.

PHARNUS, a king of Media, who was conquered by Ninus king of Assyria.

(1.) PHAROS, in ancient geography, a small oblong island, adjoining to the continent of Egypt, over-against Alexandria. On account of the port of Alexandria, the entrance to which was difficult and dangerous, the Pharos was called *the key of Egypt*, or *of the Egyptian sea* (*Lucan*); and *Pharos*, from being a proper name, is become an appellative to denote all light-houses, from the magnificent building of that description on the island. (See N° 3.) It stood upon four crabs of glass.

(2.) * PHAROS, PHARE. *n. f.* [from *Pharos* in Egypt.] A light-house; a lantern from the shore to direct sailors.—He augmented and repaired the

port of Ostia, built a *pharos* or light-house. *Arbuthnot on Coins.*

(3.) PHAROS is a pile raised near a port, where fire is kept burning in the night, to direct vessels near at hand. The Pharos of Alexandria, built in the island of Pharos at the mouth of the Nile, was anciently very famous, inasmuch as to communicate its name to all the rest. This most magnificent tower consisted of several stories and galleries, with a lantern at top, in which a light being continually burning, might be seen 100 miles off. It was accounted one of the seven wonders of the world. It was built by the famed architect Sostrates, a native of Cnidos, or, according to some, Deiphanes, the father of Sostrates; and cost Ptolemy Philadelphus 800 talents. The several stories were adorned with columns, ballustrades, and galleries of the finest marble and workmanship; to which some add, that the architect had contrived to fasten some looking-glasses so artificially against the highest galleries, that one could see in them all the ships that sailed on the sea for a great way. Instead of this noble structure, there is now only a kind of irregular castle, without ditches or outworks of any strength, out of the midst of which rises a tower, which serves for a light-house, but hath nothing of the beauty and grandeur of the old one. The Colossus of Rhodes also served as a pharos. See COLOSSUS, N° 1.

(4.) PHAROS, an island on the coast of Illyricum, now called *Lefna*. See LESINA, N° 1. (*Mela*, ii. c. 7.)

PHARPAR, or } one of the rivers of Damas-
PHARPHAR, } cus, or rather an arm of the
Barrady or Chrysothraos, which waters Damascus and the country about it. (2 Kings v. 12.) The river of Damascus has its fountain in the mountains of Lebanon. At its approach to the city it is divided into three arms, one of which passes through Damascus. The other two water the gardens round about, and then reuniting, they lose themselves at four or five leagues from the city,

city, towards the N. See *Maunderell's Travels from Aleppo to Jerusalem*; also the articles *ABANA* and *DAMASCUS*.

PHARKIRCHEN. See **PHARKIRCHEN**.

(1.) **PHARSALIA**, an epic poem, composed by Lucan on the civil war between Pompey and Cæsar, and particularly on the victory of the latter over the former, (see N° 2.) It is a poem universally acknowledged to have great beauties and great defects; but we are the less capable of estimating its merit as a whole, that either time has deprived us of the last books, or its author has left it incomplete.

(2.) **PHARSALIA**, or } a town of Phthiotia, a
PHARSALUM, } district of Thessaly, near
PHARSALOS, or } Phææ and Larissa, now
 (1.) **PHARSALUS**, } called **FARSA**, to which

last place Pompey fled from the plains of Pharsalus. It is watered by the Enipeus, which falls into the Apidanus, and both into the Peneus. Between Pharsalus and Enipeus, Pompey drew up his men at the fatal battle of Pharsalia. At the commencement of this battle the whole plain was covered, from Pharsalia to the Enipeus, with two armies, dressed and armed after the same manner, and bearing the same ensigns. At first both kept a mournful silence; but at length the trumpets sounded, and Cæsar's army advanced to begin the attack, when Caius Crastinus, a centurion, at the head of 120 men, threw himself upon the enemy's first line with incredible fury, and made a great slaughter of them, in consequence of a promise he had made to Cæsar. But while he was still pressing forward, forcing his way through the first line, one of Pompey's men ran him in at the mouth with such violence, that the point of his sword came out at the hind part of his neck. Pompey's soldiers then took courage, and stood the enemy's onset. While the foot were thus sharply engaged in the centre, Pompey's horse in the left wing marched up, and having widened their ranks with a design to surround Cæsar's right wing, charged his cavalry, and forced them to give ground. Hereupon Cæsar ordered his horse to retreat a little, and give way to the six cohorts, which he had posted in the rear as a body of reserve. These, upon a signal, coming up, charged the enemy's horse with determined resolution, aiming only at the faces of the enemy. This new manner of fighting had the desired effect. For the young patricians, whom Cæsar called the *pretty young dancers*, not willing to have their faces deformed with scars, turned their backs, and fled in the utmost confusion, leaving the foot at the mercy of the enemy. Cæsar's men did not pursue them, but charging the foot, now naked and unguarded, surrounded them, and cut most of them to pieces. Pompey was so transported with rage at seeing the flower of his forces thus cut in pieces, that he left his army, and retired slowly to his tent, without speaking a word, and continued there, like one distracted, till his whole army was defeated. Cæsar no sooner saw himself master of the field than he marched to attack Pompey in his entrenchments; upon which, Pompey putting on such a garment as might best favour his flight, stole out at the decuman gate, and took their road to **LARISSA**, which city had

hitherto shown great attachment to him, but where he was murdered, though some say this happened at Pelusium. (See **POMPEY**.) In the mean time Cæsar began the attack on the enemy's camp, which was vigorously defended by the cohorts Pompey had left to guard it; but they were at length forced to yield. Cæsar was not a little surprised, when, after having forced the entrenchments, he found the enemy had made preparations before-hand for a festival after the victory, which they thought certain. In Pompey's tent Cæsar found the box in which he kept his letters; but, with a magnanimity worthy of himself, he burnt them all, without reading one; saying, that he had rather be ignorant of crimes, than obliged to punish them. The next day, when the dead were numbered, it appeared that Cæsar had scarce lost 200 men; among whom were about 30 centurions, whom Cæsar caused to be buried with great solemnity. He paid particular honours to the body of Crastinus, and ordered his ashes to be deposited in a tomb, which he erected to his memory. On Pompey's side, the number of the dead amounted to 15,000 according to some, and to 25,000 according to others. Cæsar took 24,000 prisoners, 8 eagles, and 180 ensigns.

(2.) **PHARSALUS**, or **PHARSALIA**, an extensive plain of Thessaly, between the above town and the Enipeus, in which the decisive battle above mentioned was fought.

PHARUS, in botany, a genus of the hexandria order belonging to the monœcia class of plants; and in the natural method ranking under the fourth order, *Gramina*. The male calyx is a bivalved unisporous glume; the corolla, a bivalved glume; the female calyx the same with the male; the corolla an unisporous, long, and wrapping glume. There is but one seed.

PHARUSII, or **PHAURUSII**, an ancient nation of Africa, beyond Mauritania. *Mela*, l. c. 4.

PHARYX, a river of Macedonia, which runs into the *Ægean Sea*; by some called *Baphyrus*.

PHARYCADON, an ancient town of Macedonia, on the Peneus. *Strabo*, ix.

PHARYGE, an ancient town of Locris.

* **PHARYNGOTOMY**. *n. f.* [*φαρυγ* and *τομή*.] The act of making an incision into the wind pipe, used when some tumour in the throat hinders respiration.

PHARNYX. See **ANATOMY**, *Index*.

PHARZA, or **FARSA**, a town of European Turkey in Jænna, (the ancient Thessaly), anciently called *Pharsalia*, 14 miles S. of Larissa. See **FARSA**, and **PHARSALIA**, N° 2.

PHASCHIN, an island in the Frozen Ocean, near the S. coast of Nova Zembla. Lon. 75. 10. E. Ferro. Lat. 70. 30. N.

PHASCUM, in botany, a genus of the order of musci, belonging to the cryptogamia class of plants. The anthera is operculated, with a ciliated mouth; the calyptrae are minute.

PHASE, or **PHASIS**. See **PHASIS**, N° 3.

PHASELIS, an ancient town of Pamphylia, much frequented by pirates. *Strab.* 14. *Lucan*, viii. 251.

(1.) * **PHASELS**. *n. f.* [*φασεῖς*, Lat.] French beans. *Ainsworth*.

(2.) **PHASELS**, are a species of **PHASSOLUS**.

(1.) **PHAS**.

(1.) PHASEOLUS, the KIDNEY-BEAN; a genus of the decandria order, belonging to the diadelphia class of plants; and, in the natural method, ranking, under the 32d order, *Papilionaceæ*. Linnæus enumerates 15 species. Of these, one comprehends many varieties. Those principally cultivated for the table are, 1. The common white, or Dutch kidney-bean. 2. The smaller kidney-bean, called the *Battersea kidney-bean*. And, 3. The upright sort, called the *tree kidney-bean*. 1. The first sort was some time ago propagated in England, and is still in Holland; it grows very tall, and requires long stakes and poles to climb on, and its beans are considerably broad; this makes them less saleable in the markets, people supposing them to be old because they are broad; and they are hence grown into disuse, though a much more valuable kind for eating than any other. 2. The *Battersea bean* is what is more universally cultivated: it never grows very tall, nor rambles far, and the air can easily pass between the rows, because of its moderate growth; this makes it bear plentifully, and ripen well for the table. It is the best tasted bean, except the last. 3. The *tree kidney-bean*, is also a plentiful bearer, and never rambles, but grows up in form of a shrub; but its beans are broader than the *Battersea* kind, and are not so well tasted. They are all propagated from seeds, which are to be put into the ground in the end of March or beginning of April for an early crop; but they should have a warm situation and a dry soil; and be planted in a dry season. The manner of planting them is, to draw lines with a bough over the bed, at $3\frac{1}{2}$ feet distance, into which the seeds are to be dropped about two inches asunder; and the earth is to be drawn over them with the head of a rake, to cover them about an inch deep. In a week after sowing, the plants will appear, and the earth should be drawn up about their stalks as they rise up; for a few days after this they will require no further care, except to be kept clear from weeds, and, when the beans appear, to have them gathered twice a-week; for if the beans are suffered to hang on too long, they not only become of no value, but they weaken the plant. The first crop of kidney-beans will continue a month in good order; and, to supply the table afterwards, there should be fresh sowings in March, April, May, and June; the last of which will continue till the frosts come to destroy them. Some raise their early crops on hot beds; and this is to be done exactly in the same manner as the raising the early cucumbers.

(2.) PHASEOLUS, a new species of phaseolus, apparently a very useful one, has been discovered by M. Moraney, "an inhabitant of Morne-Rouge, dependant on the Cape;" we suppose Cape François of the island of St Domingo. It requires no peculiar management: its roots are in season when the pods blacken, and its fibres run in every direction, searching for nourishment through the clefts of rocks, and receiving the impression of the strata without injury. If the principal root is left, the plants shoots again and flourishes as before; but it is not yet ascertained whether it puts forth any new roots. The seeds are not alimentary when dressed, as if nature designed them only for

propagating other plants. Every use which a farinaceous plant can supply, this new phaseolus has successfully answered.

PHASES, *n. f. plur.* in astronomy, from the Greek word *φαίνω*, to appear; the several appearances or quantities of illumination of the Moon, Venus, Mercury, and the other plants. See ASTRONOMY.

PHASGA, or PISGAH. See PISGAH.

PHASIANIA, in ancient geography, a country of Asia, seated on the banks of the PHASIS.

PHASIANI, the people of PHASIANA. They were originally from Egypt.

PHASIANUS, in ornithology, a genus of birds, belonging to the order of gallinæ. The cheeks are covered with a smooth naked skin. Gibbon, in his Roman History, tells us, that the name *phasianus* is derived from the river PHASIS, the banks of which are the native habitation of the pheasant. See PHASIS, N° 3. There are many species and varieties. See PHEASANT.

1. PHASIANUS ARGUS is yellowish, with black spots, a red face, and a blue crest on the back of the head. It is found in Chinese Tartary. "The Argus, (says Latham), though it be a native in China, is very commonly found in the woods of Sumatra, where it is called *coo-oo*. It is found extremely difficult to be kept alive for any considerable time after catching it in the woods; never for more than a month. It seems to have an antipathy to the light, being quite inanimate in the open day; but when kept in a dark place, it appears perfectly at ease, and sometimes makes its note or call, from which it takes its name; and which is rather plaintive, and not harsh like that of a peacock. The flesh resembles that of the common pheasant."

2. PHASIANUS COLCHICUS is red, with a blue head, a wedge-shaped tail, and papillous cheeks. It is a native of Africa and Asia.

3. PHASIANUS GALLUS, the common dunghill cock and hen, with a compressed caruncle or fleshy comb on the top of the head, and a couple of caruncles or wattles under the chin. The ears are naked, and the tail is compressed and erected. Of all birds perhaps this species affords the greatest number of varieties; there being scarce two to be found that exactly resemble each other in plumage and form. The tail, which makes such a beautiful figure in most of these birds, is entirely wanting in others; and in some even the rump also. The toes, which are usually four in all animals of the poultry kind, yet in one species amount to five. The feathers which lie so sleek and in such beautiful order in most of those we are acquainted with, are in a peculiar species all inverted, and stand staring the wrong way. Nay, there is a variety that comes from Japan, which instead of feathers seems to be covered over with hair. It is not well ascertained when the cock was first made domestic in Europe; but it is generally agreed that he was first brought to Europe from Persia. Aristophanes calls the cock the *Persian bird*; and tells us he enjoyed that kingdom before some of its earliest monarchs. This animal was known so early even in the most savage parts of Europe, that the cock was one of the forbidden foods among the ancient Britons. Indeed,

deed, the domestic fowl seems to have banished the wild one. Persia itself seems no longer to know it in its natural form. But the cock is still found in the islands of Tinian, in many others of the Indian Ocean, and in the woods on the coast of Malabar, in its ancient state of independence. In his wild condition, his plumage is black and yellow, and his comb and wattles yellow and purple. There is another peculiarity also in those of the Indian woods; their bones, which, when boiled, with us are white, in those are as black as ebony. No animal has greater courage than the cock when opposed to one of his own species; and in every part of the world where refinement and polished manners have not entirely taken place, cock-fighting is a principal diversion. In China, India, the Philippine islands, and all over the East, cock-fighting is the sport and amusement even of kings and princes. With us it is declining every day; and it is to be hoped it will in time be abolished even among the lowest vulgar. See COCK-FIGHTING, § 1—4. The cock claps his wings before he sings or crows. His sight is very piercing; and he never fails to cry in a peculiar manner, when he discovers any bird of prey in the air. His extraordinary courage is thought to proceed from his being the most salacious of all birds. A single cock suffices for ten or a dozen hens; and it is said that he is the only animal whose spirits are not abated by indulgence. But he soon grows old; the radical moisture is exhausted; and in 3 or 4 years he becomes utterly unfit for impregnation. "Hens also, (says Willoughby), as they for the greatest part of the year daily lay eggs, cannot suffice for so many births, but for the most part after three years become barren." The hen seldom clutches a brood of chickens above once a season, though instances have been known in which they produced two. The number of eggs a domestic hen will lay in the year are above 200 provided she be well fed and supplied with water and liberty. It matters not much whether she be trodden by the cock or not; she will continue to lay although the eggs of this kind can never by hatching be brought to produce a living animal. Her nest is made without any care, if left to herself; a hole scratched in the ground, among a few bushes, is the only preparation she makes for this season of patient expectation. Nature, almost exhausted by its own fecundity, seems to inform her of the proper time for hatching, which she herself testifies by a clucking note; and by discontinuing to lay. The good housewives, who often get more by their hens eggs, than by their chickens, often artificially protract this clucking season, and sometimes entirely remove it. As soon as a hen begins to cluck, they flint her in her provisions; which, if that fails, they plunge her into cold water; this, for the time, effectually puts back her hatching; but then it often kills the poor bird, who takes cold and dies under the operation. If left entirely to herself, the hen would seldom lay above twenty eggs in the same nest, without attempting to hatch them. In the wild state the hen seldom lays above fifteen eggs. When the hen has hatched her chickens, her affection seems to alter her very nature, and correct her imperfections. No longer voracious or cow-

ardly, she abstains from all food that her young can swallow, and flies boldly at every creature that she thinks is likely to do them mischief. Capons may very easily be taught to clutch chickens. To effect this they pluck the feathers off his breast, and rub the bare skin with nettles; they then put the chickens to him, which presently run under his breast and belly, and probably rubbing his bare skin gently with their heads, allay the stinging pain which the nettles had just produced. This is repeated for two or three nights, till the animal takes an affection to the chickens that have thus given him relief, and continues to give them the protection they seek for. He from that time brings up a brood of chickens like a hen, clutching them, feeding them, clucking and performing all the functions of the tenderest parent. A capon once accustomed to this service, will not give over; but when one brood is grown up, he may have another nearly hatched put under him, which he will treat with the same tenderness he did the former. The cock, from his salaciousness, is a short lived animal in a domestic state; but how long these birds live, if left to themselves, is not yet well ascertained. Aldrovandus hints their age to be 10 years; and it is probable that this may be its extent. They are subject to some disorders; and as for poisons, besides nux vomica, which is fatal to most animals except man, they are injured, as Linnæus asserts, by elderberries; of which they are not a little fond. Of this species Mr Latham enumerates no less than 13 varieties, beginning with the wild cock, which is a 3d less in the body than the domestic cock. This variety he imagines to be the original stock from whence all our domestic varieties have sprung. They appear to be natives of the forests of India. There are but few places, however, as he observes, where the different voyagers have not met with cocks and hens either wild or tame. Those of Pulo Condore are very much like our own, but considerably less, being only of the size of a crow, (*Damp. Voy.* vol. i. p. 392.) Those of Sumatra and Java are remarkably large, and are called the *St Jago breed*. The cock is so tall as to peck off a common dining table. When fatigued, he sits down on the first joint of the leg. (*Hist. Sumatra*, p. 98.) They are found in New Guinea, but not in great plenty. (*Forr. Voy.* p. 105.) Forster observes, that they are plenty at Easter, Society, and Friendly Isles; at the two last they are of a prodigious size. They are not uncommon at the Marquesas, Hebrides, and New Caledonia; but the Low Isles are quite destitute of them. (See *Obs.* p. 193.) Ducks and poultry are numerous in the Sandwich Isles. (*Cook's Journal*, p. 229.) They are not found to breed in the northern parts of Siberia; and in Greenland are only kept as rarities. (*Faun. Groen.*) See HATCHING, N° 1.

4. PHASIANUS GUINEENSIS. The *momot*, or *Guinea pheasant*; is brownish, somewhat red below with a wedge-like tail, and wants spurs.

5. PHASIANUS NECTHEMERUS is white, with a black crest and belly, and a wedge-shaped tail. It is a native of China.

6. PHASIANUS PICTUS has a yellowish crest, a red breast, and a wedge-shaped tail. It is a native of China.

(1.) * PHASIS. *n. f.* In the plural *phases*. [*φασις*; *phasis*, Fr.] Appearance exhibited by any body; as the changes of the moon.—All the hypotheses yet contrived were built upon too narrow an inspection of the *phases* of the universe. *Glanville*.—

He o'er the seas shall love or fame pursue;

And other months another *phasis* view. *Greesh.*

(2.) PHASIS. See PHASES.

(3.) PHASIS, in ancient geography, a river which falls into the Euxine sea about 700 miles from Constantinople. "From the Iberian Caucasus (says Gibbon), the most lofty and craggy mountains of Asia, that river descends with such oblique vehemence, that in a short space it is traversed by 120 bridges. Nor does the stream become placid and navigable till it reaches the town of Sarapana, five days journey from the Cyrus, which flows from the same hills, but in a contrary direction, to the Caspian lake. The proximity of these rivers has suggested the practice, or at least the idea, of wafting the precious merchandize of India down the Oxus, over the Caspian, up the Cyrus, and with the current of the Phasis into the Euxine and Mediterranean seas. As it successively collects the streams of the plain of Colchis, the Phasis moves with diminished speed, though accumulated weight. At the mouth it is 60 fathoms deep, and half a league broad; but a small woody island is interposed in the midst of the channel: the water, so soon as it has deposited an earthy or metallic sediment, floats on the surface of the waves, and is no longer susceptible of corruption. In a course of 100 miles, 40 of which are navigable for large vessels, the Phasis divides the celebrated region of Colchis or Mingrelia, which, on three sides, is fortified by the Iberian and Armenian mountains, and whose maritime coast extends about 200 miles, from the neighbourhood of Trebizond to Dioicurias, and the confines of Circassia. Both the soil and climate are relaxed by excessive moisture; 28 rivers, besides the Phasis and his dependent streams, convey their waters to the sea; and the hollowness of the ground, appears to indicate the subterraneous channels between the Euxine and the Caspian."

(4.) PHASIS, an ancient city of Colchis, so named from the above river.

(1.) * PHASM. *n. f.* [*φασμα*.] Appearance; phantom; fancied apparition.—Thence proceed many aerial fictions and *phasms*. *Hammond*.

PHASMATA, } in physiology, are certain ap-
(2.) PHASMS, } pearances arising from the various tinctures of the clouds by the rays of the heavenly bodies, especially the sun and moon. These are infinitely diversified by the different figures and situations of the clouds, and the appulies of the rays of light; and, together with the occasional flashings and shootings of different meteors, they have, no doubt, occasioned those prodigies of armies fighting in the air, &c. of which we have such frequent accounts in most ancient authors. See 2 Maccab. xi. 8. *Melan&h. Meteor.* 2 *Spel. de Comet.* ann. 1618. *Joséphus*.

PHASSACHATES, in lithology, a species of agate, which the ancients, in its various appearances, sometimes called *leucachates* and *perileucos*.

PHATEZ, a town of Russia, in the prov. of Kurk. on the Ufoza; 40 miles N. of Kurk.

PHAUDA, an ancient town of Phocis.

PHAVORINUS, an ancient Lexicographer, author of a Greek Lexicon, still extant; the best edition of which is that in fol. *Venet.* 1712. (*Lempriere*.) Perhaps he is the same with *Favorinus*, a native of Arles in Gaul. See FAVORINUS.

PHAURUSII. See PHARUSII.

PHAYLLUS, tyrant of Ambracia, brother of the celebrated Onomarchus of Phocis. See PHOCIS. *Pauf.* x. c. 2.

PHEA, or PHEIA, an ancient town of Elis. *Hom. Iliad.* vii.

(1.) * PHEASANT. *n. f.* [*faisan*, Fr. *phasianus*, from *Phasis*, the river of Colchos.] A kind of wild cock.—The hardest to draw are tame birds; as the cock, peacock, and *pheasant*. *Peacham*.—

Preach as I please, I doubt our curious men

Will chuse a *pheasant* still before a hen. *Pope*.

(II.) PHEASANT, in ornithology. See PHASIANUS. Mr Latham enumerates 9 different species of pheasants, and 6 varieties of the common pheasant; but as he gives them no distinctive trivial or classical names, we reserved a description of several of them to this article, instead of arranging them under PHASIANUS, the generic name.

1. PHEASANT, COMMON. Mr Latham observes, that the common pheasant is now found in a state of nature in almost the whole of the Old Continent. They sometimes (he says) come into farm yards near woods, and produce cross breeds with common hens. He then says, "M. Salerne remarks, that the hen pheasant, when done laying and sitting, will get the plumage of the male, and after that become so little respected by him, as to be treated with the same incivility as he would show to one of his own sex. Pheasants were originally brought into Europe from the banks of the PHASIS, a river of Colchis, in Asia Minor; and from whence they still retain their name. Next to the peacock, they are the most beautiful of birds, as well for the vivid colour of their plumes as for their happy mixtures and variety. These birds, so beautiful to the eye, are not less delicate when served up to the table. Their flesh is considered as the greatest dainty. A spirit of independence seems to attend the pheasant even in captivity. In the woods, the hen pheasant lays from 18 to 20 eggs in a season; but in a domestic state, she seldom lays above 10. In the same manner, when wild, she hatches and leads up her brood with patience, vigilance, and courage; but when kept tame, she never sits well, so that a hen is generally her substitute upon such occasions: and as for leading her young to their food, she is utterly ignorant of where it is to be found; and the young birds starve, if left solely to her protection. The pheasant, therefore, on every account, seems better left at large in the woods than reclaimed to pristine captivity. Its fecundity when wild is sufficient to stock the forest; its beautiful plumage adorns it; and its flesh retains a higher flavour from its unlimited freedom. At night they roost upon the highest trees of the wood; and by day they come down into the lower brakes and bushes, where their food is chiefly found. They generally make a kind of flapping noise when they are with the females; and this often apprises the sportsman of their retreats. At other times he traces them in the snow, and frequently takes them in springs.

But

But of all birds they are shot most easily; as they always make a whirring noise when they rise, by which they alarm the gunner, and being a large mark, and flying very low, there is little chance of missing them. When these birds are taken young into keeping, they become as familiar as chickens. For her nest, dry grass and leaves must be laid for her in the pheasantry. The young ones are very difficult to be reared, and they must be supplied with ants eggs, which is the food the old one leads them to gather when wild in the woods. To make these go the farther, they are to be chopped up with cruds or other meat: and the young ones are to be fed with great exactness, both as to the quantity and the time of their supply. This food is sometimes also to be varied; and wood lice, earwigs, and other insects, are to make a variety. The place where they are reared must be kept extremely clean; their water must be changed twice or thrice a-day; they must not be exposed till the dew is off the ground in the morning, and they should always be taken in before sunset. When they become adult, they very well can shift for themselves; but they are particularly fond of oats and barley. The pheasant, when full grown, seems to feed indifferently upon every thing that offers. A French writer, asserts that they regale even upon carrion.

2. PHEASANT, COURIER. "The courier pheasant is but very imperfectly described by Fernandez; and is said to be 18 inches long. The general colour of the plumage is white, inclined to fulvous; about the tail they are black, mixed with some spots of white; the tail itself is long, and of a green colour, reflecting in some lights like the feathers of a peacock: the wings are short. This species inhabits the hotter parts of Mexico; flies slow; but is recorded to outrun the swiftest horse."

3. PHEASANT, HYBRIDAL, a name given by Latham to a species or variety which is a mixed breed between the pheasant and cock; one of which is in the Leverian Museum.

4. PHEASANT, PARRAKA. The parraka is about the size of a small fowl, resembling it in the bill, legs, and body. Its length is 23 inches. The colour of the bill is dark rufous; the eyes are brown; the general colour of the plumage is a deep brown on the back, and fulvous under the belly: the top of the head is fulvous, and the feathers are somewhat long, but not so much as to form a real crest; the wings are short; the webs of some of the quills are somewhat rufous; the tail consists of 12 feathers, is even at the end, about a foot in length, and is, for the most part, carried pendent; the legs are of a dark rufous, inclining to black; the claws are like those of a fowl. It is peculiar (says Mr Latham) in its internal structure in respect to the windpipe; which, instead of entering directly the breast, as in most birds, passes over the side of the left clavicle, and on the outside of the fleshy part of the breast, being covered only by the skin, then taking a turn upwards, passes over the right clavicle into the breast, and is distributed through the lungs in the usual way. The female has not this circumvolution of the windpipe. The hannequaw, mentioned by Bancroft, is probably the same bird. He says that it is black, roosts in trees, and may be heard early

in the morning, distinctly, but hoarsely, repeating the word *bannequaw* (easily mistaken for parraquaw) very loud. These are found in the unfrequented woods of the internal parts of Cayenne, Guiana, and many parts of S. America. At sunrise they set up a very loud cry, which is thought to be the loudest of all birds in the new world; at which time the eyes appear red, as does a small skin under the breast, which is not at all seen, except when the bird makes such exertions, or is angry. This cry is very like the word parraquaw; and is repeated many times together; and often many cry at once, or answer one another, but most in breeding time, which is twice in the year; at each time laying from four to six eggs; making the nest in low branches or stumps of trees, and behaving with their chickens in the same manner as hens. They feed on grain, seeds, and herbs; but feed the young in the nest with worms and small insects. These, with many other birds, inhabit the woods by day, coming out into the open savannas morning and evening to feed; at which times they are chiefly killed by the natives and near inhabitants. They may be brought up tame; and their flesh is much esteemed.

5. PHEASANT, SUPERB. This bird Linnæus describes from the various representations of it painted on paper hangings, and China ware; and farther confirmed by a figure and description in a Chinese book which came under his inspection.

(III.) PHEASANT'S EYE, in botany. See ADONIS.

(IV.) PHEASANTS, ISLE OF, or ISLE DE FAISANS, or the ISLE OF CONFERENCE, an island between France and Spain, formed by the Bidassoa, abounding with *Pheasants*. The BIDASSOA had long been a subject of dispute between France and Spain, each country laying claim to it exclusively; till the 15th century, when it was agreed between Lewis XII. of France, and Ferdinand V. of Spain, that the river should be common to both nations. This island was afterwards the scene where another treaty, called the *Treaty of the Pyrenæes*, was concluded between France and Spain, in 1699; and it was also the scene of an interview between the monarchs of these kingdoms, on the marriage of Lewis XIV. whence its latter name. It lies about 2 miles from Fontarabia. Lon. 1. 46. W. Lat. 45. 20. N.

PHEBE, a deaconess of the port of Corinth, called *Cenobrea*. St Paul had a particular esteem for her; and Theodoret thinks he lodged at her house, while he continued at Corinth. She brought to Rome the epistle he wrote to the Romans, wherein she is commended in so advantageous a manner. See Rom. xvi. 1, 2.

PHECADIV, an ancient inland town of Macedonia. Liv. 31. c. 41.

PHEODOROVKA, a town of Russia, in Ekaterinossk, on the Bug; 60 miles NW. of Cherson.

PHEDOSIEUKA, a town of Russia, in the country of the Cossacks, on the Choper; 44 miles W. of Archangelskaja.

* PHEER. *n. s.* A companion. See FEAR, N° 5. (*Spens.*)

* To PHEESE. *v. a.* [perhaps to *feaze*.] To comb; to fleece; to curry.—

As he be proud with me, I'll *phæse* his pride.

Shak.

X 2

PHEGOR,

PHEGOR, or **PEOR**, a deity worshipped at a very early period by the Midianites and Moabites, and probably by all the other tribes which then inhabited Syria. **PHEGOR**, or **PEOR**, is the same with the Hebrew word *pechor*, which signifies *opened*, and probably refers to the prophetic influence always attributed to the solar deity, by which he *opened* or *discovered* things to come. Accordingly we find **PHEGOR** or **PEOR** generally joined to **BAAL**, which was the Syrian and Chaldean name of the sun after he became an object of worship; hence **BAAL-PHEGOR** must have been the sun worshipped by some particular rites, or under some particular character. What these were, a resolution of *Pechor* into its component parts may perhaps inform us. As this word, wherever it occurs in Scripture, has some relation to distending or opening the mouth wide, it is probably compounded of **PHAH** the *mouth* or *face*, and **PHAR** *naked*. In those countries we know that the women wore veils; but it would appear, that in celebrating the rites of this deity they were unveiled. It seems even not improbable, that on these occasions the sexes danced promiscuously without their clothes; a practice which would naturally give birth to the licentious amours mentioned in the 25th chapter of the book of Numbers. If this be admitted, it will follow that *Pechor* was the sun presiding over the mysteries of Venus. See **BAAL-PEOR**.

PHEIA. See **PHEA**.

PHELDSCHARETZ, a town of Russia, in the province of Caucasus; 20 miles S. of Kizlar.

PHELIN. See **PHELLIN**.

PHELLANDRIUM, **WATER HEMLOCK**; a genus of the digynia order, belonging to the pentandria class of plants; and in the natural method, ranking under the 45th order, *Umbellata*. There are two species, one of which, viz.

PHELLANDRIUM AQUATICUM, is a native of Britain. This grows in ditches and ponds, but is not very common. The stalk is remarkably thick and dichotomous, and grows in the water. It is a poison to horses, bringing upon them, as Linnaeus informs us, a kind of palsy; which, however, he supposes to be owing not so much to the noxious qualities of the plant itself, as to those of an insect which feeds upon it, breeding within the stalks, and which he calls *curculio paraplecticus*. The Swedes give swines dung for the cure. The seeds are sometimes given in intermittent fevers, and the leaves are by some added to discutient cataplasms. In the winter, the roots and stem, dissected by the influence of the weather, afford a very curious skeleton or network. Horses, sheep, and goats, eat the plant; swine are not fond of it; cows refuse it.

PHELLIA, a river of Laconia. *Pauf.* iii. 20.

(1.) **PHELLIN**, a river of Russia, which runs from Lake Vertz, and falls into the Baltic, at Pernov.

(2.) **PHELLIN**, a town of Russia, in the prov. of Riga, on the Phellin; 96 miles N. of Riga. Lon. 43° E. Ferro. Lat. 58. 10. N.

PHELLOE, an ancient town of Achaia. *Pauf.*

PHELLUS, 2 ancient towns of Greece: 1. in Attica; 2. in Elis, near Olympia. *Strabo*.

PHEMIUS, an ancient musician, who taught Homer music.

PHEMONOE, a priestess of Apollo, who is said to have been the inventress of heroic verses. *Pauf.* x. 6.

PHENEATÆ, the people of **PHENEUM**. *Cic.*

PHENEUM, an ancient town of Arcadia, where Mercury had a temple. *Cicero*.

PHENEUS, a town and lake of Arcadia.

PHIENGITES, among the ancients, the name of a beautiful species of alabaster. It is a rude irregular mass, very shattery and friable, but of a brightness superior to that of most other marbles, and excelling them all in transparency. The colour is an agreeable pale yellowish, white, or honey colour; the yellowish is more intense in some places than in others, and sometimes makes an obscure resemblance of veins. It is very weak and brittle in the mass; and when reduced to small pieces, may be easily crumbled between the fingers into loose, but considerably large, angular pieces, some perfect, others complex, irregular, or mutilated, and all approaching to a flat shape. The ancients were very fond of this species in public buildings; See **ATHENS**, § 8; and **BOSPHORICUM**,) and the Temple of Fortune, built entirely of it, has been long celebrated. Its great beauty is its transparency, from which alone this temple was perfectly light when the doors were shut, though it was built without a window, and had no other light but what was transmitted through the stone its walls were built with. It was anciently found in Cappadocia, and is still plentiful there: we have it also in Germany and France, and in Derbyshire, and some other English counties. It takes an excellent polish, and is very fit for ornamental works, where there is no great strength required. See **AMETHYST**.

PHENICE, a port of the island of Crete, on the W. coast of the island. St Paul having anchored at Phenice, in his voyage to Rome (*Acts* xxvii. 12.), advised the ship's crew to spend the winter there, because the season was too far advanced.

PHENICIA. See **PHOENICIA**.

(1.) * **PHENICOPTER**. *n. f.* [*φαινικοπτερος*; *phanicopterus*, Lat.] A kind of bird, which is thus described by *Martial*:—

Dat mihi penna rubens nomen; sed lingua guisfis
Nestra sapit; quid si garrula lingua foret?

—He blended together the livers of guiltheads, the brains of pheasants and peacocks, tongues of *phenicopters*, and the melts of lamproys. *Hakewill* on *Providence*.

(2.) **PHENICOPTER**. See **PHOENICOPTERUS**.

(1.) * **PHENIX**. *n. f.* [*φαινιξ*; *phanix*, Lat.] The bird which is supposed to exist single, and to rise again from its own ashes.—

There is one tree, the *phenix* throne; one *phenix*

At this hour reigning there.

Shak.

To all the fowls he seems a *phenix*. *Milton*.

—Having the idea of a *phenix* in my mind, the first enquiry is, whether such a thing does exist? *Locke*.

(2.) **PHENIX**. See **PHOENIX**.

(1.) * **PHENOMENON**. *n. f.* [*φαινόμενον*; *phenomenon*, Fr. it is therefore often written *phanomenon*; but being naturalised, it has changed the *a*, which is not in the English language, to *e*. But

if

if it has the original plural termination *phenomena*, it should, I think, be written with *æ*.] 1. Appearance; visible quality.—Philosophers, whose business it is to describe, in comprehensive theories, the *phenomena* of the world and their causes. *Burnes*.—These are curiosities of little or no moment to the understanding the *phenomenon* of nature. *Newton*.—The most considerable *phenomenon* belonging to terrestrial bodies is gravitation. *Bentley*. 2. Any thing that strikes by any new appearance.

(2.) PHENOMENON. See PHENOMENON.

PHEONS. *n. f.* in heraldry, the barbed heads of darts, arrows, or other weapons.

PHEOS, in botany, a name which Theophrastus, Dioscorides, and others, give to a plant used by fullers in dressing their cloths, and of which there were two kinds, a smaller called simply *pheos*, and a larger called *hippopheos*. This plant is sometimes called *PHLEOS*; and is thus confounded with a kind of marsh cudweed, or *gnaphalium*, called also by that name; but it may always be discovered which of the two plants an author means, by observing the sense in which the word is used, and the use to which the plant was put. The *pheos*, properly so called, that is, the cudweed, was used to stuff beds and other such things, and to pack up with earthen vessels to prevent their breaking; but the *pheos*, improperly called *phleos*, only about cloths: this was, however, also called *stabe* and *enaphon*.

(1.) PHERÆ, an ancient town of Thessaly, where the tyrant Alexander reigned, hence named *Pheræus*. See *PELOPIDAS*. *Strabo* 8. *Cic. de Off.* 2.

(2.—3.) PHERÆ, two towns in Attica and Lacedæmonia.

PHERÆUS, a surname of Jason and Alexander.

PHERECRATES, a Greek comic poet, who was contemporary with Plato and Aristophanes. After the example of the ancient comedians, who never introduced upon the theatre imaginary but living characters, he acted his contemporaries. But he did not abuse the liberty which at that time prevailed upon the stage. He laid it down as a rule to himself never to hurt the reputation of any person. Twenty-one comedies are attributed to him, of which there now only remain some fragments collected by Hertelius and Grotius. From these, however, it is easy to discern, that Pherecrates wrote the purest Greek, and possessed that ingenious and delicate railery which is called *attic urbanity*. He was author of a work on *Musick*, and a kind of verse called, *Pherocratic*.

PHERCRATIC VERSE. The three last feet were in hexameter verse, and the first of those three feet was always a spondee. This verse of Horace, for example, *Quamvis pontica pinus*, is a Pherecratic verse.

PHERECYDES, a native of Scyros, who flourished about A. A. C. 560. and was disciple of Pittacus. (See *PITTACUS*.) He is said to have been the first philosopher who wrote on natural subjects and the essence of the gods. He was also the first who held the ridiculous opinion, "that animals are mere machines." He was Pythagoras's master, who loved him as his own father.

He lived to the age of 85, and was one of the first prose writers among the Greeks. It is difficult to give an accurate account of the doctrines of Pherecydes. It is most probable that he taught those opinions concerning the gods and the origin of the world which the ancient Grecian theologians borrowed from Egypt. See *EGYPT*, *METAPHYSICS*, *MYSTERIES*, *MYTHOLOGY*, and *POLYTHEISM*.

PHERES, in fabulous history, the son of Cretheus and Tyro, who built PHERÆ, in Thessaly, where he reigned. He married Clymene, by whom he had Admetus. *Apollod.*

PHERETIMA, the wife of Battus, king of Cyrene, and the mother of Arceilaus. After her son's death, she recovered the kingdom by the aid of Amasis king of Egypt, and to avenge the murder of Arceilaus, she caused all his assassins to be crucified round the walls of Cyrene, and she cut off the breasts of their wives, and hung them up near the bodies of their husbands. It is said that she was devoured alive by worms; a punishment from heaven for her unparalleled cruelties.

HERON, a king of Egypt, who succeeded Sesostris. He was blind; and he recovered his sight by washing his eyes, according to the directions of the oracle, in the urine of a woman who had never had any unlawful connections. He tried his wife first, but she appeared to have been faithful to his bed, and she was burnt with all those whose urine could not restore sight to the king. He married the woman whose urine proved beneficial. *Herodot.* ii. c. 111.

PHERVINTERSKOI, a cape of Russia, on the E. coast of Nova Zembla. Lon. 95. 10. E. Ferro. Lat. 77. 30. N.

PHETRI. See *PARTHIA*, § 3.

* PHIAL. *n. f.* [*phiala*, Lat. *phiale*, Fr.] A small bottle.—

Upon my secure hour thy uncle stole
Wit's juice of curs'd hebenon in a *phial*. *Shak.*
—He proves his explications by experiments made with a *phial* of water. *Newton*.

(2.) PHIAL, LEYDEN. See *ELECTRICITY*, *Index*; and *LEYDEN*, N° 4.

PHIALIA, a town of Arcadia. *Paus.* viii. 3.

PHICORES, an ancient nation who inhabited the banks of the Palus Mæotis. *Mela*, i. 19.

PHIDIAS, the most famous sculptor of antiquity, was an Athenian, and flourished in the 83d Olympiad. The wonderful artist was not only consummate in the use of his tools, but accomplished in the sciences of history, poetry, fable, geometry, optics, &c. He first taught the Greeks to imitate nature perfectly, and all his works were received with admiration. They were also incredibly numerous; for it was almost peculiar to Phidias, that he united the greatest facility with the greatest perfection. His Nemesis, one of his first pieces, was carved out of a block of marble, found in the Persian camp, after the battle of Marathon. He made an excellent statue of Minerva for the Plateans; but the statue of this goddess in her magnificent temple at Athens, of which there are still some relics, was an astonishing production. Pericles ordered Phidias to make a statue of the goddess; and Phidias formed a most admirable figure of ivory and gold, 39 feet high.

high. But what rendered his name immortal proved at that time his ruin. He had carved upon the shield of the goddess his own portrait and that of Pericles; and this was made a crime. Upon this he withdrew to Elis, and made for the Elians the Olympic Jupiter; a prodigy of art which was ranked among the 7 wonders of the world. It was of ivory and gold; 60 feet high, and every way proportioned. Phidias concluded his labours with this masterpiece; and the Elians, to do honour to his memory, appropriated to his descendants, the office of keeping clean this magnificent image.

PHIDITIA, in Grecian antiquity, feasts celebrated with great frugality at Sparta. They were held in the public places and in the open air, Rich and poor assisted at them equally, and on the same footing; their design being to keep up peace, friendship, good understanding, and equality among the citizens great and small. It is said that those who attended this feast brought each a bushel of flour, eight measures of wine named *chorus*, five mince of cheese, and as many figs.

PHIGALEI, an ancient people of Peloponnesus, who inhabited the country near Messenia. *Paus.*

PHIGALIA. See **PHALIA**.

(2.) **PHILA**, in mythology, one of the attributes of Venus, which distinguishes her as the mother of love, from *pharis* to love.

(1.) **PHILA**, an ancient town of Macedonia.

(1.) **PHILADELPHIA**, in antiquity, were games instituted at Sardis to celebrate the union of Caracalla and Geta, the sons of Septimius Severus.

(2-5.) **PHILADELPHIA**, in ancient geography, the name of 4 towns; 1. in Arabia; 2. in Cilicia; 3. in Syria. (*Lempr.*) 4. in Lydia, now called *Alab-scher*. *Plin. v. c. 29.*

(6.) **PHILADELPHIA**, an ancient town of Turkey in Asia, in Natolia. It is seated at the foot of mount Tmolus, by the river Cogamus, whence there is an exceeding fine view over an extensive plain. It was founded by Attalus Philadelphus, brother of Eumenes. It was very liable to earthquakes, which, perhaps, arose from its vicinity to the region called *Catacekenmene*. So severe were those earthquakes, that even the city walls were not secure; and so frequent were they, that these experienced daily concussions. The inhabitants, therefore, who were not numerous, lived in perpetual apprehension, and their constant employment was in repairs. In fact, so great were their fears, that their chief residence was in the country, the soil of which was very fertile. Such is Strabo's account of this place. In 1097, it was taken by assault by John Ducas the Greek general. It was without difficulty reduced also in 1206, under the same emperor. The Turks marched from the East with a design to plunder it and the maritime towns. The emperor Manuel, in 1175, retired for protection from the Turks, to this place. In 1300 it fell by lot to Karaman. In 1306, it was besieged by Aliaras, and considerably harassed; but was not taken. In 1391, this place alone refused to admit Bajazet; but it was at length forced to capitulate for want of provisions. It has been matter of surprise that this

town was not totally abandoned; and, yet it has survived many cities less liable to inconveniences, and is still an extensive place, though in appearance it is poor and mean. Some remnants of its walls are still standing, but with large gaps. The materials are small stones strongly cemented. It is thick, lofty, and has round towers. Near it, among the mountains, there is a spring of a purgative quality; and many people resort to it in the hot months. It tastes like ink, is clear, but tinges the earth with the colour of ochre. The famous wall which credulity has believed to be made of human bones, stands beyond this and the town. See N° 10. Dr Chandler, who visited it, says, "the number of churches is 24, mostly in ruins, decorated with painted faints. Only six are in a better condition. The episcopal church is large, and ornamented with gilding, carving, and holy portraits. The Greeks are about 300 families, and live in a friendly intercourse with the Turks. The clergy and laity in general, are ignorant of Greek, yet the liturgies and offices of the church, are read in that language. The Philadelphians are a civil people. One of the Greeks lent us a small earthen vessel full of choice wine. Philadelphia, possessing waters excellent in dying, and being situated on one of the most capital roads to Smyrna, is much frequented, especially by Armenian merchants. The Greeks still call this place by its ancient name, but the Turks call it *Allabijur*. The number of inhabitants is about 8000; of whom 2000 are supposed to be Christians." It is about 40 miles ESE. of Smyrna. Long. 28. 15. E. Lat. 38. 28. N.

(7.) **PHILADELPHIA**, a populous and well cultivated county of Pennsylvania; bounded on the NE. by the Poquashin and Bucks county; SE. and S. by the Delaware, which separates it from New Jersey; W. by Delaware county, and NW. by Montgomery county. It is 22 miles long, and 12 broad; contains 89,600 acres; and is divided into 14 townships: viz. Smithfield, Byberry, Moreland, Lower Dublin, Oxford, Bristol, Germantown, Roxburgh, Northern Liberties, Blockley, Philadelphia, Moyamensing, Passyunk, and Kingsfels. It contained, in 1795, besides the city of **PHILADELPHIA**, (N° 9.) 11,667 free citizens, and 114 slaves. It sends 3 members to the General Assembly.

(8.) **PHILADELPHIA**, a township in the above county.

(9.) **PHILADELPHIA**, the capital of Pennsylvania, and of the above county. It is one of the most beautiful and regular cities in the world, being of an oblong form, situated on the W. bank of the Delaware, on an extensive plain, by the course of the river, 120 miles from its mouth, where it flows into the Atlantic. It is however only 60 miles from the sea at Little Egg Harbour, in a WNW. direction; where the river is a mile broad, and deep enough to admit a sixty-four gun ship. The tide rises 6 feet perpendicular, and flows at the rate of 4 miles an hour, to the falls of Trenton, 30 miles higher up in a NE. direction. The length of the city, from E. to W; that is, from the Delaware to the Schuylkill, upon the original plan of Mr Penn, is 10,300 feet, and the

the breadth from N. to S. is 4,837 feet. This city was founded by the celebrated William Penn. The original plan of the city was a parallelogram, extending in length from Delaware, two squares beyond Schuylkill. The western limits of the city were, however, confined by the first charter, granted by William Penn in 1701, to the E. side of Schuylkill. This plot, which is two miles long and one broad, is intersected by a great number of streets, crossing each other at right angles. Of these there were originally 9, from the Delaware to the Schuylkill; these were intersected by 23 streets running N. and S. The E. and W. streets, except High Street, are named after the trees first found by the colony on their arrival in the country; viz. *Pine Street*; *Sassafras*, *Mulberry*, *Chestnut*, *Walnut*, *Spruce*, *Pine*, and *Cedar Streets*; which last is the S. boundary of the city. The streets running N. and S. are named according to their numerical order, commencing at Delaware. *Front Street* is the first, then *Second Street*, *Third Street*, &c. to *Thirteenth Street*; whence this numerical order ceases, and another begins at Schuylkill in the same order, *First Street*, *Second Street*, &c. to *Eighth Street*; between which and Thirteenth Street is Broad Street, so named from being the broadest in the city. The number of squares in the original plan was 184; but as several of the squares have since been intersected by new streets, the number in 1795 was 304; several of which are again intersected by lanes. In the breadth of the streets there is a great diversity; High Street being 100 feet wide; Broad Street 113; Mulberry Street 60, and all the other streets in the original plan 50 feet wide. In the improved part of the city the streets are paved with pebble stones in the middle, to the breadth of three fifths of the whole wideness; and on each side, the foot paths are paved with bricks, and defended by posts, 10 or 12 feet distant from each other. But in these streets which have been lately paved anew, the posts have been removed, the foot paths raised 8 or 10 inches, and defended in front towards the street, by a range of hewn stone. There are several other considerable streets, not in the original plan: as *Water Street*, *Dock Street*, *Penn Street*, &c. Of these the two first are considerable: *Water Street* is 30 feet broad and extends to Pine Street parallel with the course of the Delaware. *Penn Street* is compactly built, with elegant and lofty houses, some of them five stories high. From its convenience near the shipping, it has become a place of considerable business. The wharves are made with square casements of logs, filled with earth and stones, and extend above two miles in front of the city and suburbs. *Dock Street*, which was originally a swamp, and a general nuisance, was not laid out till 1784; but is now a large and beautiful street, winding in a serpentine course through 2 squares. It is from 90 to 1000 feet broad, and has a row of fine poplar trees on each side. The ends of all the streets within the city are public property, and being the places where the fire wood is kept, produce a revenue of L. 489 a-year. The streets are illuminated at night by 662 lamps, which consume annually 8,606 gallons of oil. The houses, in general, are mostly about 3 stories high, built

with bricks, in a plain neat style. The height of the ground on which the city stands is about 40 feet above the Delaware, but some parts are lower, particularly *Water Street*, which is apt to be overflowed and the stores damaged in high floods, when a strong E. wind blows. The houses for public worship are 28; viz. 5 for Quakers; 6 for Presbyterians and Seceders; 3 for Episcopalians; 3 for Roman Catholics; 2 for German Lutherans; 2 for Methodists; 1 for German Calvinists; 1 for Swedish Lutherans; 1 for Moravians; 1 for Baptists; 1 for Universalists; 1 for African-Episcopalians; and a Jewish synagogue. Some of these are very elegant. The other public buildings are a state-house, two city court-houses, a county court-house, a jail, an university, a public library, the Philosophical Society's hall, a dispensary, an hospital, an alms-house, three incorporated banks, two theatres, an amphitheatre, an anatomical theatre and laboratory, 3 market-houses, a fish-market, a house of correction, and a powder magazine; which often contains upwards of 50,000 quarter casks of gun-powder. The state house stands on the S. side of Chestnut Street, between Fifth and Sixth Street, and was erected in 1753. The State house square is an elegant place, ornamented with trees, gravelled walks, &c. and surrounded by a high brick wall on three sides, the house itself inclosing it on the 4th. "The *Philadelphia Library* was incorporated in 1742, and in 1795 contained upwards of 12,000 vols. besides a very valuable museum, and a philosophical apparatus. The market-house in High Street extends from Front Street to Fourth Street, and is supported by 300 pillars. "It is perhaps (says Mr Jos. Scott) exceeded by none in the world, in abundance, neatness, and variety of provisions exposed in it." (*United States Gazetteer*.) The university, on the W. side of Fourth Street, was incorporated in 1791, and united with the old college, academy, charity schools, &c. in 1799. The whole number of students is about 510; of whom about 25 are graduated annually. The *American Philosophical Society* was formed Jan. 2, 1769, and incorporated 15th March, 1780. Three volumes of their *Transactions* were published in 1771, 1796, and 1793. The *College of Physicians*, for promoting medical, anatomical, and chemical knowledge, was formed in 1781, and incorporated in 1789. And so much is literature of every kind cultivated by all ranks of people in this city, that an annual fair for books was established, and commenced the 1st Tuesday of September 1803. The city is provided with many public charitable institutions, which are well managed. The stock of the public hospital, in 1793, was L. 17,065; besides several valuable lots of ground, buildings, &c. The *Philadelphia Dispensary*, for medical relief to the poor, was instituted 12th April, 1786, and has proved very useful. The *Quaker's Almshouse* is another excellent charitable institution. *Academies*, for instructing young ladies in all the branches of polite education, are numerous, and well conducted. *African Schools*, for the instruction and improvement of the children of the unfortunate race of Ham, have been also established and produced good effects. There are also many humane societies in this city; one for the recovery of persons

persons apparently drowned; another for *alleviating the miseries of prisons*, which has done much good; and a 3d entitled *The Pennsylvania Society for the Abolition of Slavery*, which was commenced in 1787, and was enlarged in 1794. There are also societies for the relief of *German emigrants*; of *Irish emigrants*; of widows and families of Presbyterian clergymen; and one for the *assistance of emigrants* in general, instituted in 1794; besides many other similar humane institutions, too tedious to enumerate. The chief manufactures carried on in this city and suburbs are as follow: Ten rope-works, which manufacture 800 tons of hemp annually; 13 breweries, which consume above 50,000 bushels of barley; 6 sugar houses; 2 rum distilleries, and 1 rectifying ditto; 15 earthen ware manufactories; 3 for cards, 6 for chocolate, 4 for mustard, 4 for nails, 1 for steel, 1 for aquafortis, sal ammoniac, and glaubers salts, 1 for oil colours, 11 for brushes, 2 for buttons, 1 for parchment, 1 for Morocco leather; besides various private manufactories of guns, hats, cabinets, and various small wares, in gold, silver, copper, tin-plate, pewter, &c. There are also great numbers of paper-mills in the suburbs, which have encouraged printing so much, that there were 31 *printing-houses* in this city in 1795, 4 of which publish each a *Daily Gazette*, one of which is in the French language; besides two *Weekly Newspapers*, one of which is in the German language. The catalogues of books for sales contain upwards of 300 sets of Philadelphia editions, from 1 vol. 12mo to 18 vols. 4to, besides a greater variety of maps and charts than is to be found anywhere else in America. The trade of Pennsylvania is chiefly carried on from this city: (See PENNSYLVANIA, § 16:) and there are few commercial towns in the world where ships from Philadelphia may not be found in their ports. Upwards of 13 sailed in 1794 to China and the E. Indies; but the most extensive commerce is carried on with Great Britain and the W. India islands. The number of vessels entered at this port in 1793, was 1414, of which 477 were large ships. The number of houses, in 1794, was above 9000, and 400 were building. The population of the city, in 1794, was estimated at 55,000. Philadelphia is governed by a mayor and recorder, 15 aldermen, and 30 common-council-men. The mayor is elected annually by the aldermen; the recorder every 7th year, by the mayor and aldermen, from among the citizens. The aldermen are chosen every 2d year, on the 1st Tuesday in April; and the common-council on the 2d Tuesday in April, every 3d year, by the freemen; who also have the privilege of electing the members of the Assembly. The mayor, recorder, and aldermen, are justices of the peace, and of oyer and terminer. They hold these courts quarterly. There are two annual fairs, besides the *Book fair* above mentioned, on the 27th May and 27th October. A supreme federal court is held here on the 1st Monday in February and August; a circuit court on the 11th of April; and a district court on the 2d Tuesday in February, May, August, and November. In 1793, a malignant fever, called the *Yellow Fever* (see MEDICINE, *Index*), prevailed here, and carried off 4042 of the inhabitants. Philadelphia is 97

miles SW. of New York, and 356 SW. of Boston. Lon. 75° 8' 45" W. Lat. 39° 56' 54" N.

(10.) PHILADELPHIA STONES, a name which some authors have given to what is otherwise called *Christian bones*, found in the walls of that city. It is a vulgar error that these walls are built of bones; and the tradition of the country is, that when the Turks took the place they fortified it for themselves, and built their walls of the bones of the Christians whom they had killed there. Dr Smyth, in one of his epistles, mentions this wall as an instance of Turkish barbarity. This idle opinion has gained credit merely from a loose and porous stone of the sparry kind, found in an old aqueduct, which is still in the wall. Sir Paul Rycaut brought home pieces of these stones, which even he supposed to have been bones; but they proved on examination to be various bodies, chiefly vegetable, incrustrated over and preserved in a spar of the nature of that which forms incrustations in Knareborough spring, and other places with us. These bodies are often cemented together in considerable numbers by this matter, and their true shape lost in the congeries, till a diligent and judicious eye traces them regularly.

(1.) PHILADELPHIAN, *adj.* Of or belonging to Philadelphia.

(2.) PHILADELPHIAN SOCIETY, in ecclesiastical history, an obscure and inconsiderable society of mystics. They were formed about the end of the 17th century by an English female fanatic, whose name was *Jane Leadley*. This woman seduced, by her visions, predictions, and doctrine, several disciples, among whom were persons of learning. She believed that all dissensions among Christians would cease, and the kingdom of the Redeemer become a scene of charity and felicity, if Christians, disregarding the forms of doctrine or discipline of their several communions, would all join in committing their souls to the care of the internal guide, to be instructed, governed, and formed, by his divine impulse and suggestions. But she went farther: she even pretended a divine commission to proclaim the approach of this glorious communion of saints; and was convinced that the society established by herself was the true kingdom of Christ. One of her leading doctrines was, that of the final restoration of all intelligent beings to perfection and happiness.

PHILADELPHIANS, *n. s.* the natives or citizens of one or other of the cities called PHILADELPHIA.

(I.) PHILADELPHUS, in antiquity, a title or surname of several ancient kings; from the Greek φιλος, *lover*, and αδελφος, *brother*. See PROLEMY, and EGYPT, § 12.

(II.) PHILADELPHUS, in botany, the PIPE-TREE, or MOCK ORANGE; a genus of the monogynia order, belonging to the icofandria class of plants; and in the natural method ranking under the 19th order, *Heperidea*.

1. PHILADELPHUS CORONARIUS, *white syringa*, or *mock orange*, has been long cultivated in the gardens of this country as a flowering shrub: it is not well known in what country it is to be found native. It rises 7 or 8 feet high, sending up a great number of slender stalks from their

root,

root. These have a grey bark, branch out from their sides, and are garnished with oval, spear-shaped leaves. These last have deep indentures on their edges; their upper surface being of a deep green, but the under surface pale, with the taste of a fresh cucumber. The flowers are white, and come out from the sides and at the ends of the branches in loose bunches, each standing on a distinct foot-stalk: they have four oval petals, which spread open, with a great number of stamina within, surrounding the style. This shrub, by its flowers, makes a fine figure in May and June; for they are produced in clusters both at the end and from the sides of the branches. They are of a fine white colour, and exceedingly fragrant. The petals of which each is composed are large, and spread open like those of the orange; and then forming branches, which stand each on its own separate short foot-stalk, and being produced in plenty all over the shrub, both at once feast the eye and the smell. These flowers, however, are very improper for chimneys, water-glasses, &c. in rooms, as their scent will be too strong. The double-flowering *syria* is a variety, seldom rising above a yard high. The leaves and branches are also proportionally smaller and more numerous, and the bark of the shoots of a lighter brown, than in the other. It sometimes produces flowers with 3 or 4 rows of petals; whence the name. They are much smaller than those of the other, and flourish only once in five years, which makes it hardly worth propagating. The dwarf *syria* is still of lower growth, seldom arising to more than two feet in height; and the branches and leaves are smaller and more numerous, and the bark is of a lighter brown. It never produces flowers.

2. *PHILADELPHUS INODORUS*, the *Carolina syria*, with entire leaves, is a native of Carolina, and as yet but little known in Europe. It rises with a shrubby stalk of about 16 feet in height, sending out slender branches from the sides opposite, garnished with smooth leaves shaped like those of the pear tree, and standing on pretty long foot-stalks. The flowers are produced at the ends of the branches; and are large, white, spreading open, with a great number of short stamina with yellow summits. This is the tallest grower by far of the species, and makes the grandest show when in blow, though the flowers have no smell.

3. *PHILADELPHUS NANUS*, with oval leaves somewhat indented, and double flowers, seldom rises above 3 feet; the flowers come out singly from the sides of the branches, and have a double or triple row of petals, of the same size and form, as well as the same scent, with No 1.; but it flowers very rarely. The propagation of all the sorts is very easy. 1. The most certain method is by layers; for the young twigs being laid in the earth in winter, will be good rooted plants by autumn following. 2. These plants may be increased by cuttings, which being planted in October, in a shady moist border, many of them will grow; though it will be proper to let those of the Carolina sort remain until spring, and then to plant them in pots, and help them by a little heat in the bed. By this assistance, hardly one cutting

will fail. 3. They may be also increased by suckers; for all the sorts throw out suckers, though the Carolina *syria* the least of any. These will all strike root, and be fit for the nursery ground: nay, the double-flowering and the dwarf sorts are always increased this way; for these plants having stood 5 or 6 years, may be taken up and divided into several scores. All the plants, however, whether raised from layers, cuttings, or suckers, should be planted in the nursery to get strength, before they are set out for good. They should be planted a foot asunder, and the distance in the rows should be two feet. After this, they will require no other care than hoeing the weeds, until they have stood about two years, which will be long enough for them to stand there.

(1, 2.) *PHILÆ*, a town and island of Egypt, above the smaller cataract, but placed opposite Syene, by Pliny; v. c. 9.

(3.) *PHILÆ*, one of the *SPORADES* isles.

PHILÆNI, two brothers, citizens of Carthage, who sacrificed their lives for the good of their country. When the Carthaginians ruled over the greatest part of Africa, the Cyrenians were also a great and wealthy people. The country betwixt them was sandy, and of an uniform appearance. There was neither river nor mountain to distinguish their limits, which engaged the two nations in terrible and tedious wars. At last they agreed, "That upon a day appointed, deputies should set out from their respective homes, and the place where they met one another should be accounted the common boundary of both nations." Accordingly, the Philæni, sent from Carthage, made all dispatch to perform their journey. The Cyrenians proceeded more slowly. These last, perceiving themselves behind, charged the Carthaginians with setting out before the time; and made a mighty bustle upon it. The Carthaginians then desired any other terms; on which the Greeks made this proposal to the Carthaginians, "Either to be buried alive in the place which they claimed as the boundary to their nation, or that they would advance forward to what place they inclined upon the same condition." The Philæni accepting the offer, made a sacrifice of their lives to their country, and were buried alive. The Carthaginians dedicated altars in that place to the memory of the two brothers. These altars, called *Are Philænorum*, served as a boundary to the empire of the Carthaginians, which extended from this monument to Hercules's Pillars, which is about 2000 miles, or, according to the accurate observations of the moderns, only 1420 geographical miles. *Sallust. de Bell. Jug.*

(1.) *PHILÆUS*, the son of Ajax by Lyfide, daughter of Coronus, one of the Lapithæ; and a lineal ancestor of *MILTIADES*.

(2.) *PHILÆUS*, the son of *AUGÆAS*, king of Elis, whom Hercules placed on the throne, after killing his father.

PHILANTHROPIC, *adj.* Belonging to philanthropy; benevolent to all mankind.

PHILANTHROPIST, *n. f.* A lover of mankind. *Aph.*

(1.) * *PHILANTHROPY*. *n. f.* [*philos* and *antropos*.] Love of mankind; good nature.—Such

a transient temporary good nature is not *philanthropy*. Addison.

(2.) **PHILANTHROPY** is of nearly the same import with **BENEVOLENCE**; and differs from *friendship*; as this last affection subsists only between individuals, whilst *philanthropy* comprehends the whole species. Whether man has an instinctive propensity to love his species, which makes him incapable of happiness but in the midst of society; and impels him to do all the good that he can to others, feeling their felicity an addition to his own, is a question that has been warmly debated among philosophers, ever since metaphysics was studied as a science. Among the philosophers of the 17th century Hobbes took the unpopular side of this question; insisting that man is naturally a selfish animal, incapable of any generous principle. Lord Shaftesbury adopted the opposite side, and has been followed by Bp. Butler, Hutcheson, Lord Kames, Dr Beattie, Dr Reid, &c. who insist that the whole duty of man results from an intuitive principle called the *moral sense*, from which philanthropy is inseparable. (See **MORAL PHILOSOPHY**.) On the other hand Mr Locke and his followers, particularly Mr Hartley, deny that any one principle of the human mind is *intuitive* or *innate*. (See **INSTINCT**.) Without presuming to decide this question, the origin of philanthropy may be thus traced. Brothers and sisters being constantly together, contribute to each other's amusement; hence arises that pleasure which they have in each other's company, and the uneasiness which they feel when separated. This generates mutual love in their minds, which is strengthened by the injunctions of their parents. Benevolence, thus generated, soon extends to their daily companions; and takes a wider range as these companions are multiplied, and as children advance towards the state of manhood. New objects then present themselves to the mind. A man soon discovers, that, as he is a member of a community, his happiness as an individual depends in a great measure on the prosperity of the whole. Hence arises *patriotism*, and that pleasure which we all take in the eminence of our countrymen. But the principle of benevolence stops not here. He whose mind is enlarged by a liberal education, considers all particular countries as provinces of one great country extended over the whole globe; and all mankind, of course, as not only sharing the same nature with himself, but as being in reality his fellow-citizens and brethren. The principles of religion, if he be actuated by them, must bid these reflections, and make him wish the happiness of all who stand in the same relation with himself to the Great Governor of the world. This is *philanthropy*; and we see how it may spring, by the great law of association, from desires which, in their original state, cannot be considered as other than selfish. It is a calm sentiment, which we believe hardly ever rises to the warmth of affection, and certainly not to the heat of passion.

PHILIPPIUS, Francis, professor of eloquence at Padua, was born in 1308. In 1429, he was sent by the republic of Venice to Constantinople, where he married the daughter of the learned Emmanuel Chrysoloras. The emp. John Palcolo-

gus sent him to the emp. Sigismund to ask assistance against the Turks. He was very learned. He died at Florence, in 1481. His works were printed at Basil, in 1739, fol.

(1.) **PHILEMON**, a Greek comic poet, son to Damon, and cotemporary with Menander. Any advantage he had over this poet, was owing less to his own merit than to the intrigues of his friends. Plautus has imitated his comedy of the *Merchant*. He is reported to have died laughing on seeing his ass eat figs. He was then about 97 years of age.

(2.) **PHILEMON** the younger, son of the above, was also the author of 54 comedies, of which there are still extant considerable fragments collected by Grotius. These prove that he was not a poet of the first rank. He flourished about A. A. C. 274.

(3.) **PHILEMON**, a rich citizen of Colossæ in Phrygia, who was converted to the Christian faith, with Appia his wife, by Epaphras the disciple of St Paul. (Coloss. ii. 1.) Perhaps we should have known nothing of St Philemon, had it not been on account of his slave **ONESIMUS**, who having robbed him, and run away from him, came to Rome, where he found St Paul, and was very serviceable to him. St Paul converted him, baptized him; and sent him back to his master Philemon; to whom he wrote a letter, still extant, which passes for a masterpiece of that kind of eloquence; natural, lively, strong; and pathetic, that was peculiar to St Paul. Philemon (1. 2.) had made a church of his house; and all his domestics, as well as himself, were members. His charity, liberality, and compassion, were a sure refuge to all that were in distress. The Apostolical Constitutions say, that St Paul made him bishop of Colossæ; but the Menza insinuates, that he went to Gaza in Palestine, of which he was the apostle and first bishop. From thence he returned to Colossæ, where he suffered martyrdom, with his wife, in the time of Nero.

PHILENE, a town of Attica, between Athens and Tangara. *Stat. Theb.* iv. 102.

PHILEROS, a town of Macedonia. *Plin.*

PHILETERUS, an eunuch, who was made governor of Pergamus by Lyfimachus, whom he afterwards quarrelled with, and made himself king of that country, A. A. C. 283. (See **PERGAMUS**.) He reigned 20 years, and was succeeded by his nephew **FUMENES** I.

PHILETAS, a Greek poet and grammarian, of the island of Cos, who flourished under Philip and Alexander the Great, and was preceptor of Ptolemy Philadelphus. He was the author of some Elegies, Epigrams, and other works, which are not extant. He is celebrated by Ovid and Propertius, as one of the best poets of his age.

PHILETUS, a man mentioned by St Paul, in his 2d Epistle to Timothy, ii. 16, 17, 18. along with Hymeneus, as persons who had erred and denied the resurrection. We have nothing very certain concerning Philetus, but a fabulous story by Abdias, in the life of St James major, to the following purpose. St James the son of Zebedee, passing through the synagogues of Judea and Samaria, and preaching, Hermogenes and Philetus strenuously opposed him, affirming, that Jesus Christ was not the Messiah. Hermogenes was a notable

notable magician, and Philetus was his disciple, who being converted, was desirous to bring his master to St James; but Hermogenes bound him up so by his magic art, that he could not come at the apostle. But Philetus found means to make St James acquainted with what had happened to him; upon which St James unbound him, and Philetus came to him. Hermogenes perceiving how ineffectual his art was against the saint, became himself also a convert.

PHILIBEG. *n. f.* a little plaid, called also *kilt*. It is a sort of short petticoat reaching nearly to the knees, worn by the Scotch Highlanders. It is a modern substitute for the lower part of the plaid, being found to be less cumbersome, especially in time of action, when the Highlanders used to tuck their breech into their girdle. Almost all of them have a great pouch of badger and other skins, with tassels dangling before, in which they keep their tobacco and money.

PHILIDAS, a friend of **PELOPIDAS**, one of those who joined in the conspiracy to expel the Spartans from Thebes, and in whose house they met.

PHILINUS, a native of Agrigentum, who fought along with Hannibal, against the Romans. He wrote a history of the Punic wars. *C. Nep. Polyb.*

(1.) **PHILIP**, the apostle, was a native of Bethsaida in Galilee. His call by our Lord; his conversation with Nathanael; his presence at the miraculous feeding of 5000; with his estimate of the expense; his introduction of the Greeks to our Saviour, and his request to see the Father, are recorded in the gospels, chiefly by St John. It is supposed that he and Nathanael were present at the marriage at Cana. The upper Asia fell to this apostle's lot, where he took great pains in planting the gospel, and by his preaching and miracles made many converts. In the latter part of his life, he came to Hierapolis in Phrygia, a city addicted to idolatry, and particularly to the worship of a serpent of a prodigious bigness. St Philip by his prayers procured the death of this monster, and convinced its worshippers of the absurdity of paying divine honours to such odious creatures. But the magistrates, enraged at Philip's success, imprisoned him, and ordered him to be severely scourged, and then put to death, which some say was by crucifixion; others, by hanging him up against a pillar. St Philip is generally reckoned among the married apostles; and it is said he had three daughters, two of whom preserved their virginity, and died at Hierapolis; the third died at Ephesus. The pretended gospel under his name was forged by the Gnostics, to countenance their bad principles and worse practices. The Christian church observes his festival, with that of St James, on the first day of May. *Euseb. lib. iii. c. 30.*

(2.) **PHILIP**, the 12^d of the seven deacons, was chosen by the apostles after our Saviour's resurrection. (Acts vi. 5.) This deacon, they say, was of Cæsarea in Palestine. It is certain that his daughters lived in this city. (Acts xxi. 8. 9.) His preaching and miracles performed at Samaria; his conversion and baptism of the people; his interview with, and conversion of the Ethiopian eunuch;

with his subsequent baptism of him; and his preaching the gospel at Azotus and various other cities, are recorded by St Luke in the Acts of the Apostles. The modern Greeks say, that he went to Tralles in Asia, where he founded a church, of which he was the apostle and bishop, and where he rested in peace, after performing many miracles. The Latins, on the contrary, say, that he died at Cæsarea; and that three of his daughters were there buried with him. It is thought, that the eunuch converted by St Philip was the first apostle of the Ethiopians; and the Abyssines boast of having received the Christian faith from him.

(3.) **PHILIP I.** King of Macedonia. See **MACEDON**, § 3.

(4.) **PHILIP II.** King of Macedonia, was the 4th son of Amyntas II. He was sent to Thebes as an hostage by his father, where he learned the art of war under Epaminondas, and studied the manners and the pursuits of the Greeks. He discovered, from his earliest years, that quickness of genius and greatness of courage which afterwards procured him so great a name. On the death of his brother Perdiccas III. he ascended the throne, as guardian of his nephew Amyntas III. whom he got deposed, and succeeded about A. A. C. 360. The principal transactions of his life and reign being related under **MACEDON**, § 6-10, it is only necessary here to add a few characteristic anecdotes of him. He was the first who caused gold to be coined in his own name. He employed his wealth in procuring spices and perfumes in all the great cities of Greece, and thus making conquests without the aid of arms. At the siege of Methone in Thrace, he received a wound in his right eye by an arrow; which was inscribed with the words, "For Philip's right eye." After the secher, who shot it, had offered his services to Philip, boasting that he could hit the swiftest bird on the wing. Philip ridiculed his art by saying, that "he would be of use, if they were to make war with starlings;" which made After join the enemy, and take this method of revenge. By assuming the mask of a moderator and peace-maker, he gained confidence; in attempting to protect the Peloponnesians against the intruding power of Sparta, he rendered his cause popular; and by ridiculing the insults offered to his person as he passed through Corinth, he displayed his moderation and philosophic virtues. In his attempts to make himself master of Euboea, he was unsuccessful; and Phocion, who despised his gold as well as his meanness, obliged him to evacuate an island whose inhabitants were as insensible to the charms of money, as they were unmindful of the horrors of war, and the bold efforts of a vigilant enemy. From Euboea he turned his arms against the Scythians; but the advantages he obtained over that indigent nation were inconsiderable, and he again made Greece an object of plunder and rapine. His behaviour after the battle of Cynoskeia reflects great disgrace upon him as a man and as a monarch. In the heat of festivity, and during the entertainment he had given to celebrate his victories, Philip sallied from his camp, and with the inhumanity of a brute, insulted the bodies of the slain, and exulted over the calamities of the prisoners. His insolence, however, was checked,

when Demades, one of the Athenian captives, exclaimed, "Why do you, O king, act the part of a *Thersites*, when you can represent with so much dignity the elevated character of an *Agamemnon*?" The reproach was felt; Demades received his liberty; and Philip learned to gain popularity even among his fallen enemies, by relieving their wants and easing their distresses. At the battle of Chæronea the independence of Greece was extinguished; and Philip formed new enterprises, and meditated new conquests, being appointed general of the Greeks against the Persians. But he was stopped in the midst of his warlike preparations, being stabbed by Paulanias as he entered the theatre at the celebration of the nuptials of his daughter Cleopatra. This murder has given rise to many conjectures. Many consider the repudiation of Olympias and the resentment of Alexander, as the causes. "The ridiculous honours which Olympias paid to her husband's murderer, strengthened the suspicion against the queen; but Alexander declared that he invaded Persia to revenge his father's death upon the Persian princes, by whose intrigues the assassination had been committed." The character of Philip is that of a sagacious, artful, prudent, and intriguing monarch; he was brave in the field, eloquent and dissimulating at home, and he possessed the art of changing his conduct according to the caprices of mankind; without ever altering his purpose, or losing sight of his ambitious aims. He possessed much perseverance, and in the execution of his plans he was always vigorous. He had that eloquence which is inspired by strong passions. His assassination prevented him from achieving the greatest of his undertakings; otherwise he might have acquired as many laurels, and conquered as many nations, as his son Alexander did; and Persia might have been added to the Macedonian empire, perhaps with greater moderation, with more glory, and with more lasting advantages. The private character of Philip raises indignation. The admirer of his virtues is disgusted to find him disgracing himself among the most abandoned prostitutes, as well as by the most unnatural crimes and lascivious indulgences, which can make even the most profligate to blush. He was murdered in the 47th year of his age, and the 24th of his reign, about 336 years before the Christian era. His reign is interesting, and his administration a matter of instruction. He is the first monarch whose life and actions are described with accuracy and historical faithfulness. Philip was the father of Alexander the Great and of Cleopatra, by Olympias; he had also by Audaca an Illyrian, Cyna, who married Amyntas the son of Perdiccas, Philip's elder brother; by Nicaspolis a Thessalian, Nicæa, who married Cassander; by Philæna a Larissæan dancer, Aridæus, or PHILIP III. who reigned some time after Alexander's death; by Cleopatra, the niece of Attalus, Caranus and Europa, who were both murdered by Olympias; and Ptolemy, the first king of Egypt, by Arinœ, who in the first month of her pregnancy was married to Lagus. Of the many memorable sayings reported by Plutarch of this prince, the following are the most remarkable. Being present at the sale of some captives, an indecent posture, one of them informed

him of it; "Set this man at liberty, (said Philip) I did not know that he was my friend." A poor woman had often importuned him to do her justice, but was told that he had no time to attend to her petition; whereupon the said woman with some warmth, "Cease then to be a king." Philip felt the force of this reproach, and immediately gave her satisfaction.—Another woman came to ask justice from him as he was going out from a great entertainment, and was condemned: "I appeal, exclaimed she." "And to whom do you appeal? said the king." "To Philip fasting." This answer opened the eyes of the monarch, who retracted his sentence. If he possessed any virtue, it was that of suffering injuries with patience. Having learned that some Athenian ambassadors charged him, in full assembly, with atrocious calumnies; "I am under great obligations (said he) to those gentlemen, for I shall henceforward be so circumspect in my words and actions, that I shall convict them of falsehood." One saying of Philip, however, does him less honour than those above mentioned; viz., "Let us amuse children with playthings, and men with oaths." This abominable maxim gave rise to the observation, "That he was in full length, what Lewis XI. afterwards was in miniature." It is well known that Philip had a person about him, who called out at times, "Philip, remember! that thou art mortal;" but whether we should place this to the account of his pride or his humility, it is difficult to determine.

(5, 6.) PHILIP III. and IV. two short lived monarchs of Macedonia. See MACEDON, § 16; and 17.

(7.) PHILIP V. king of Macedon, was the son of Demetrius. His infancy, at the death of his father, was protected by Antigonus, one of his friends, who ascended the throne, and reigned for 12 years, with the title of *Independent monarch*. When Antigonus died, Philip recovered his father's throne, though only 15 years of age, and he early distinguished himself by his boldness and his ambitious views. He came to the throne, in the year 220 before our Saviour, and the beginning of his reign was rendered glorious by the conquests of Aratus; a general who was as eminent for his love of justice as his skill in war. But so virtuous a character could hardly fail to be disagreeable to a prince who indulged himself in every species of dissipation and vice; and his cruelty to him soon displayed his character in its true light; for to the gratification of every vice, he had the meanness to sacrifice this faithful and virtuous Athenian. Not satisfied with Macedonia, Philip aspired to become the friend of Annibal, to share with him the spoils which the distresses of the Romans seemed to promise. But his expectations were frustrated; the Romans discovered his intrigues; and though weakened by the valour of the Carthaginians, they were soon enabled to meet him in the field of battle. The consul Lævinus entered Macedonia; obtained a victory over him near Apollonia, reduced his fleet to ashes, and compelled him to sue for peace. This was not permanent; and when the Romans discovered that he had assisted their formidable enemy Annibal with men and money, they appointed T. Q. Flaminius

Flaminids to punish his perfidy. The Roman consul, in a general engagement, fought near Cyncephale, totally defeated the monarch, who saved his life by flight, and was obliged to demand peace by his ambassadors, which was granted with difficulty. In the midst of these public calamities the peace of his family was disturbed; and Perseus, the eldest of his sons by a concubine, raised suspicions of his brother Demetrius, whose condescension and humanity had gained popularity among the Macedonians, and who from his residence at Rome, as an hostage, had gained the good graces of the senate. Philip listened to the false accusations of Perseus, that Demetrius wished to rob him of his crown. But no sooner was Demetrius sacrificed to credulity, than Philip became convinced of his rashness; and, to punish the perfidy of Perseus, he attempted to make Antigonus, another son, his successor. But he was prevented by death, in the 42d year of his reign, A. A. C. 178.

(8.) PHILIP, a native of Acarnania, physician to Alexander the Great. When that monarch had been suddenly taken ill, after bathing in the Cydnus, Philip undertook to remove the complaint, when the rest of the physicians believed that all medical assistance would be ineffectual. But as he was preparing his medicine, Alexander received a letter from Parmenio, in which he was advised to beware of his physician Philip, as he had conspired against his life. The monarch was alarmed; and when Philip presented him the medicine, he gave him Parmenio's letter to peruse, and began to drink the potion. The serenity and composure of Philip's countenance, as he read the letter, removed every suspicion from Alexander's breast, and he pursued the directions of his physician, and in a few days recovered.

(9.) PHILIP, foster-brother of Antiochus Epiphanes (1 Macc. vi. 14, and 55. 2 Macc. ix. 29.) was a Phrygian by birth, and very much in Antiochus's favour. This prince made him governor of Jerusalem (2 Macc. viii. 8. v. 22.), where he treated the Jews very cruelly, to force them to forsake their religion. Seeing that Appolonius and Seron were defeated by Judas Maccabæus, he sent for new succours to Ptolemy governor of Cælo-Syria, who sent him Gorgias and Nicanor with a powerful army. Some time after, Antiochus going beyond the Euphrates, to extort money from the people, Philip went along with him; and Antiochus finding himself near his end (1 Macc. vi. 14.) made him regent of the kingdom, put his diadem into his hands, his royal cloak, and his ring, that he might render them to his son the young Antiochus Eupator. But Lyfias having taken possession of the government in the name of young Eupator, who was but a child, Philip not being able to cope with him, durst not return into Syria; but he went into Egypt, carrying the body of Epiphanes along with him, to implore assistance from Ptolemy Philometor against Lyfias the usurper of the government of Syria. The year following, while Lyfias was busy in the war carrying on against the Jews, Philip got into Syria, and took possession of Antioch: but Lyfias returning into the country, with great diligence, retook An-

tioc, and put Philip to death, who was taken in the city.

(10, 11.) PHILIP, M. Julius, a Roman emperor, of an obscure family in Arabia, from whence he was surnamed the *Arabian*. From the lowest rank in the army he gradually rose to the highest offices; and when he was made general of the pretorian guards, he assassinated Gordian to make himself emperor. To secure himself on the throne, he left Mesopotamia a prey to the continual invasions of the Persians, and hurried to Rome, where his election was approved by the senate and people. Philip rendered his cause popular by his liberality and profusion; particularly on occasion of the *centenary* commemoration of the foundation of the city; which was celebrated with more magnificence than under the preceding reigns. His usurpation, however, was short. Philip was defeated by Decius, who had proclaimed himself emperor in Pannonia; and he was assassinated by his own soldiers near Verona, in the 45th year of his age, and the 5th of his reign. His son, who had shared with him the imperial dignity, was also massacred in the arms of his mother. Young Philip was then in the 12th year of his age, and the Romans lamented in him the loss of rising talents, of natural humanity, and endearing virtues.

(12.) PHILIP I. king of France, succeeded his father Henry I. in 1060, when only 8 years of age, under the guardianship of Baldwin V. count of Flanders, who discharged his trust with zeal and fidelity. He defeated the Gascons who were inclined to revolt, and died, leaving his pupil 15 years of age. This young prince made war in Flanders against Robert, Baldwin's younger son, who had invaded Flanders, which belonged to the children of his elder brother. Philip marched against him with a numerous army, which was cut to pieces near Mount Cassel: and the conqueror enjoyed his usurpation. Philip, after this, tired of his wife Bertha, and fond of Bertrade, wife of Folques count of Anjou, carried her off from her husband. Having, in 1093, annulled his own marriage, as well as Bertrade's with the count of Anjou, both under pretext of barrenness, Philip and she were married by the Bp. of Beauvais. This union was declared void by Pope Urban II. a Frenchman by birth, who pronounced the sentence in France, to which he had come for an asylum. Philip, fearing the pope's anathemas might excite his subjects to rebel, sent deputies to the pope, who obtained a delay, with permission to use the crown. This delay was not of long duration. Philip was excommunicated anew in a council held at Poitiers in 1100; but in 1104, Lambert bishop of Arras, legate of Pope Pascal II. at last brought him his absolution to Paris, after having made him promise never to see Bertrade more; a promise which he did not keep. It would appear that the pope afterwards approved their marriage; for their sons were declared capable of succeeding. Philip died at Melun the 29th of July 1108, aged 57. See FRANCE, § 22.

(13.) PHILIP II. surnamed *Augustus*, with other vain titles, (see FRANCE, § 24.) son of Lewis VII. and of Alix, his third wife, daughter of Thibault, count

count of Champagne, was born the 22d Aug. 1165. He came to the crown after his father's death in 1180, at the age of 15. The king of England seemed willing to take advantage of his minority, and to seize upon a part of his dominions. But Philip marched against him, and compelled him, sword in hand, to confirm the ancient treaties between the two kingdoms. As soon as the war was ended, he made his people enjoy the blessings of peace. He gave a check to the oppressions of the great lords, banished the comedians, punished blasphemies, caused the streets and public places at Paris, to be paved, and annexed to that capital a part of the adjacent villages. It was inclosed by walls with towers; and the inhabitants of other cities were equally proud to fortify and embellish theirs. The Jews having for a long time practised the most shameful frauds in France, Philip expelled them from his kingdom, and declared his subjects quit with them; an action not justifiable. The tranquillity of France, was disturbed by a difference with the count of Flanders, which was terminated in 1184. Sometime after he declared war against Henry II. of England, and took from him the towns of Issoudun, Tours, Mans, and other places. The epidemical madness of the crusades, then agitated all Europe; and Philip caught the infection. He embarked in 1190, with Richard I. king of England, for the relief of the Christians in Palestine, who were oppressed by Saladin. These two monarchs sat down before Acre, the ancient Ptolemais; as did almost all the Christians of the east, while Saladin was engaged in a civil war on the banks of the Euphrates. Their forces, joined to those of the Asiatic Christians, were above 300,000 fighting men. Acre surrendered the 13th of July, 1191; but the disagreement, which took place between Philip and Richard, did more mischief than could be compensated by 300,000 heroes. Philip returned to France, with a languishing disorder, which was attributed to poison, but which might have been occasioned merely by the scorching heat of a climate so different from that of France. He lost his hair, his beard, and his nails; his very flesh came off. The year after, he obliged Baldwin VIII. count of Flanders, to leave him the county of Artois. He next turned his arms against Richard king of England, from whom he took Evreux and Vexin; though he had promised upon the gospels never to take any advantage of his rival during his absence. Philip, repulsed from Rouen with loss, made a truce for 6 months; during which he married Ingelburga, princess of Denmark, whose beauty could only be equalled by her virtue. The divorcing of this lady, whom he quitted to marry Agnes daughter of the duke of Merania, embroiled him with the court of Rome. The pope excommunicated him, but restored him upon his promising to take back his former wife. John succeeded to the crown of England in 1199, to the prejudice of his nephew Arthur, to whom of right it belonged. The nephew, supported by Philip, took arms against the uncle, but was defeated in Poitou, where he was taken prisoner, and afterwards murdered. The murderer, King John, being summoned before the peers of France, not having declared guilty, of his nephew's death, was deemed to lose his life, in 1203. Situated in France, were forfeited to Philip seized upon Normandy, various arms into Maine, Anjou, Touraine, and united those provinces once more to France. The English had no France but the province of Guienne; his good fortune, John was embroiled in the court of Rome. This ecclesiastical very favourable for Philip. Innocent III. conferred to him a perpetual right to the crown of England. To give the greater force to his claim, he employed a whole year in building ships, and in preparing the finest army ever seen in France. Europe was in the midst of a decisive battle between the two kings. The pope laughed at both, and artfully himself what he had bestowed upon the legate persuaded John to give his claim to the court of Rome. Then Philip was enabled by the pope to make any attempt on the land, now become a fee of the Roman crown against John, who was under his ban. Mean while, Philip's great preparations alarmed all Europe; Germany, England, the Netherlands were united against him. Count of Flanders, Philip's vassal, joined to the emperor. Philip was not disconcerted; his army was conspicuous at the battle of Bouvines, 27th July 1214, which lasted from noon to midnight. Before the engagement, he had made of his nobles who followed him with zealous in his cause. The enemy had 150,000 fighting men; that of Philip was 50,000; but it was composed of the most numerous; but it was composed of the most noble. The king ran great hazard of his life; for he was thrown down under the feet, and wounded in the neck. It is said that 500 Germans were killed. The counts of Flanders and Boulogne were led to Paris in iron chains. The French king made no conquest on the sea. Many after this ever memorable action gained him an additional power over his subjects. Philip conqueror of Germany, and possessor of most all the English dominions in France, was invited to the crown of England by the son of King John, who were grown weary of his reign. Upon this occasion he acted like an politician. He persuaded the English to ask Lewis for their king. Lewis made a descent on England, was crowned at London, and communicated at Rome, in 1216. (See ENC. 25, 26.) King John's death extinguished the sentiment of the English, who, having themselves for his son Henry III. forced to leave England. Philip died at Mantes, 27th July 1213, aged 59, after a reign of 43 years. All the kings of the 3d race, he made the accessions to the crown lands, and transmitted the greatest power to his successors. He retook his dominions Normandy, Anjou, Maine, Bretagne, Poitou, &c. After having subdued and humbled the great lords, and by the overthrow of foreign and domestic enemies took away the counterpoise which balanced his authority.

was more than a conqueror; he was a great king and an excellent politician; fond of splendour on public occasions, but frugal in private life; exact in the administration of justice; skilful in employing alternately flattery and threatenings, rewards and punishments; zealous in the defence of religion, and the church; but he knew well how to procure from her succours for the state. The enterprizes of Philip were almost always successful; he formed his projects with deliberation, and executed them with dispatch. He began by rendering the French happy, and in the end rendered them formidable; though he was more inclined to punish than to pardon; he was regretted by his subjects, as a great monarch, and as the father of his country.

(14—16.) PHILIP III, IV, and V. See FRANCE, § 26, 27, 28.

(17.) PHILIP VI. the first king of France of the collateral branch of *Valois*, was son to Charles count of *Valois*, brother of Philip IV. He mounted the throne in 1328, on the death of his cousin Charles IV. after having held the regency. France was much divided in the beginning of his reign, by disputes about the succession. Edward III. of England laid claim to it as grandson of Philip IV. by his mother; but Philip of *Valois* took possession of it as first prince of the blood. He marched to the relief of his vassal the count of Flanders, whose subjects, on account of bad usage, had taken up arms against him. He engaged the rebels at Cassel, performed prodigies of valour, and gained a signal victory on the 24th Aug. 1328. Having made all quiet, he devoted the time of peace to the internal regulations of his kingdom. The financiers were called to an account, and some of them condemned to death; among others Peter Remi, general of the finances, who left behind him near 20 millions. He afterwards enacted various laws respecting freeholds, the *appel contine d'abus*, &c. the principles of which are more ancient than the name. The year 1329 was distinguished by a solemn homage paid to Philip, by Edward III. of England, for the duchy of Guienne, upon his knees, and with his head uncovered. The interior peace of the kingdom was disturbed by disputes about the distinction of the church and state. This controversy laid the foundation of all the disputes afterwards agitated about the authority of the two powers; which contributed to confine the ecclesiastical jurisdiction within narrower limits. Soon after Edward III. declaring war against France, he recovered those parts of Guienne, of which Philip was in possession. The Flemish having again revolted from France, joined the standard of Edward; and required that he would assume the title of *king of France*, in consequence of his claim to the crown; as then, agreeably to the letter of their treaty, they only followed the *king of France*. From this period is dated the union of the flower-de-luce and leopards in the arms of England. Philip's arms were at first attended with some success; but those advantages were far from compensating the loss of the battle of Ecluse, in which the French fleet, consisting of 125 large ships, and manned by 40,000 seamen, was beat by that of England in 1340. This war, which had been al-

ternately discontinued and renewed, began again with fury in 1345. The two armies having come to an engagement the 26th Aug. 1346, near Crecy, in Ponthieure, the English gained a signal victory. (See CRESSY.) The loss of Calais, and several other places, was the fruit of this defeat. Some time before, Edward had challenged Philip of *Valois* to a single combat; which he refused, not from cowardice, but from the idea that it was improper for a sovereign prince to accept a challenge from a king who was his vassal. At length, in 1347, a truce for six months was concluded between France and England, and afterwards prolonged at different times. Philip died 23d Aug. 1350. He had, however, reunited Dauphiny to France. (See DAUPHINY.) Philip likewise added to his domain Roussillon and a part of Cerdagne, by lending some money to the king of Majorca, who gave him those provinces as a security; provinces which Charles VIII. afterwards restored without any reimbursement. The fictitious and ideal value of the coin was also raised, a great deal of bad money was issued from the mint. The officers of the mint were sworn upon the gospels to keep the secret; but Philip was a fool to think that so gross a fraud would not be discovered.

(18.) PHILIP I. king of Spain, was the son of the emperor Maximilian I. In 1496, he married Jane or Joan Q. of Spain, in whose right he obtained that crown. He died in 1506, aged 28; and was succeeded by his son Charles V. See SPAIN.

(19.) PHILIP II. son of Charles V. and Isabella of Portugal, was born at Valladolid on the 21st of May 1527, and became king of Naples and Sicily by his father's abdication in 1554. He ascended the throne of Spain on the 17th Jan. 1556. Charles had made a truce with the French, but his son broke it; and having formed an alliance with England, poured into Picardy an army of 40,000 men. The French were cut to pieces at the battle of St Quintin, on the 20th Aug. 1557. That town was taken by assault, and the day on which the breach was mounted, Philip appeared armed cap-a-pee to animate the soldiers. It was the first and last time that he ever wore this military dress. His terror was so great during the action that he made two vows; one, that he should never again be present in a battle; and the other, to build a magnificent monastery to St Lawrence, to whom he attributed the success of his arms, which he executed at Escorial, about 7 leagues from Madrid. The taking of Chatelat, Ham, and Noyon, were the only advantages derived from a battle which might have proved the ruin of France. The duke of Guise repaired the disgrace of his country by the taking of Calais and Thionville. While he was animating the French, Philip gained a battle against Marshall de Thermes near Gravelines. His army was commanded by Count Egmont, whom he afterwards caused to be beheaded. He made no better use of the victory of Gravelines than he had done of that of St Quintin; but he reaped advantage from the peace of Chateau Cambresis, the master-piece of his politics. By that treaty, concluded the 13th April, 1559, he gained possession of Thionville, Mariembourg, Montmedi, Hesdin, and the county of Charobois.

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This war, so terrible, and attended with so much cruelty, was terminated, like many others, by a marriage. The monster took for his third wife Elizabeth, daughter of Henry II., who had been promised to *his own son*, Prince Charles! and the young prince and princess were deeply in love with each other. After these glorious achievements, Philip returned in triumph to Spain, without having drawn a sword. His first care, upon his arrival at Valladolid, was to demand of the grand inquisitor an *AUTO DA FE*. This was immediately granted to him; 40 wretches were strangled and burnt, and one of them was burnt alive. Don Carlos de Seza, one of these unfortunate victims ventured to draw near to the king, and said to him, "How, Sir, can you suffer so many wretches to be committed to the flames? Can you be witness of such barbarity without weeping!" To this Philip coolly replied, "If my own son were suspected of heresy, I would myself give him up to the severity of the inquisition. If an executioner were wanting, I would supply his place myself." On other occasions he conducted himself agreeably to this intolerant spirit. This horrid cruelty, and abuse of his power, had the effect to weaken that power. The Flemish, no longer able to bear so hard a yoke, revolted. The revolution began with the large provinces of the continent; but the maritime provinces only obtained their liberty. In 1579, they formed themselves into a republic, under the title of the *UNITED PROVINCES*. Philip sent the duke of Alba to reduce them; but the cruelty of that general only served to exasperate the insurgents. Never did either party fight with more courage, or more fury. Haerlem having surrendered at discretion, the conquerors caused all the magistrates, all the pastors, and above 1500 citizens, to be hanged. The duke of Alba, being at length recalled, the grand commander of the Requesnes was sent in his place, and after his death Don John of Austria; but neither of those generals could restore tranquillity in the Lower Countries. To this son of Charles V. succeeded a grandson no less illustrious, namely, Alexander Farnese duke of Parma, the greatest man of his time; but he could neither prevent the independence of the United Provinces, nor the progress of that republic. Philip, always at his ease in Spain, instead of coming to reduce the rebels in Flanders, proscribed the Prince of Orange, and set 25,000 crowns upon his head. William superior to Philip, disdained to make use of that kind of vengeance, and trusted to his sword for his preservation. In the mean time the king of Spain succeeded to the crown of Portugal, to which he had a right by his mother Isabella. This kingdom was subjected to him by the duke of Alba, in three weeks, in 1580. Antony, prior of Crato, being proclaimed king by the populace of Lisbon, had the resolution to come to an engagement; but he was vanquished, pursued, and obliged to fly for his life. A cowardly assassin, Balthazar Gerard, by a pistol-shot killed the Prince of Orange, and thereby delivered Philip from his most implacable and dangerous enemy. Philip was charged with this crime, without reason; though when the news was communicated to him, he was imprudent enough to exclaim, "If this blow had been

given two years ago, the Catholic religion and I would have gained a great deal by it." This murder did not restore to Philip the Seven United Provinces. That republic, already powerful by sea, assisted England against him. Philip having resolved to distress Elizabeth, fitted out in 1588, a fleet of 150 ships, which were partly captured, partly burnt, and partly ship-wrecked; and of which very few returned. See *ARMADA*. This enterprise cost Spain 40 millions of ducats, 20,000 men and 100 ships. While Philip attacked England, he was encouraging in France the Holy League; the object of which was to overturn the throne and divide the state. The leaguers conferred upon him the title of *Protector* of their association; which he eagerly accepted, from a persuasion that their exertions would soon conduct him, or one of his family, to the throne of France. But Henry IV. embraced the Catholic religion, and made his rival lose France in a quarter of an hour. Philip, at length, exhausted by the debaucheries of his youth and the toils of government, drew near his last hour. A slow fever, the most painful gout, and a complication of other disorders, could not disengage him from business, nor draw from him the least complaint. At last, exhausted by a complication of distempers, and being eaten up of lice, he expired the 13th September, 1598, aged 72, after a reign of 43 years and 8 months. No character was ever drawn by different historians in more opposite colours than that of Philip. From the facts recorded in history, we cannot doubt that he possessed, in an eminent degree, penetration, vigilance, and a capacity for government. He entered into every branch of administration; watched over the conduct of his ministers with unwearied attention; and in his choice both of them and of his generals discovered considerable sagacity. He never appeared to be either elated or depressed. His temper was the most imperious, and his looks and demeanor were haughty and severe; yet among his Spanish subjects he was of easy access; listened patiently to their complaints; and where his bigotry did not interfere, was willing to redress their grievances. It is impossible to suppose that he was insincere in his zeal for religion. But as his religion was of the most corrupt kind, it served only to increase the natural depravity of his disposition; and prompted him to commit the most odious and shocking crimes. Of the triumph of honour and humanity over the dictates of superstition, there occurs not a single instance in the whole reign of Philip; who violated the most sacred obligations as often as religion afforded him a pretence, and exercised for many years the most unrelenting cruelty, without reluctance or remorse. His ambition, which was exorbitant; his resentment, which was implacable; his arbitrary temper, which would submit to no controul, concurred with his bigotted zeal for the Catholic religion, and carried the sanguinary spirit which that religion was calculated to inspire, to a greater height in Philip than it ever attained in any other prince of that or of any other age. Though of a small size, he had an agreeable person. His countenance was grave, his air tranquil, and one could not discover from his looks either joy in prosperity or chagrin in adversity. The wars
against

against Holland, France, and England, cost Philip 564 millions of ducats; but America furnished him with more than the half of that sum. His revenues, after the junction of Portugal, are said to have amounted to 25 millions of ducats, of which he only laid out 100,000 for the support of his own household. Philip was very jealous of outward respect; he was unwilling that any should speak to him but upon their knees. Few princes have been more dreaded, more abhorred, or have caused more blood to flow, than Philip II. of Spain. He had successively, if not all at once, war to maintain against Turkey, France, England, Holland, and almost all the Protestants of the empire, without a single ally. Notwithstanding for many millions employed against the enemies of Spain, Philip found in his economy and his resources wherewith to build 30 citadels, 64 fortified places, 9 sea ports, 25 arsenals, and as many palaces, without including the escorial. His debts amounted to 140 millions of ducats, of which, after having paid seven millions of interest, the greatest part was due to the Genoese. He had sold or alienated a capital stock of 100 millions of ducats in Italy. He affected to be more than commonly devout; he sat often at the refectory with the monks; he never entered their churches without kissing all the relics; he caused knead his bread with the water of a fountain, which was thought to possess a miraculous virtue, and he boasted of never having danced. One great event of his domestic life, is the death of his son Don Carlos. The manner of this prince's death is not certainly known. His body, which lies in the monument of the escorial, is there separated from his head. The particulars of his crime are as little known. All that we know of the matter is, that in 1568, his father having discovered, or pretending to have discovered, that he had some correspondence with the Hollanders, his enemies, arrested him himself in his own room. He wrote at the same time to Pope Pius V, an account of his son's imprisonment; and in his letter to this pontiff, the 20th of January, 1568, he says, "that from his earliest years, the strength of a wicked nature has stifled in Don Carlos every paternal instruction." Philip II. caused to be printed at Anvers, between 1569 and 1572, in 8 vols folio, the fine Polyglot Bible, which bears his name; and he subjected the islands afterwards called the *Philippines*. He married successively, 1st, Mary, daughter of John III. king of Portugal; 2dly, Mary, daughter of Henry VIII. queen of England; 3dly, Elisabeth of France, daughter of Henry II.; 4thly, Anne, daughter of the Emperor Maximilian II. Don Carlos was the son of his first wife.

(20.) *PHILIP III.* K. of Spain, son of Philip II. by his 4th queen, Anne of Austria, succeeded his father in 1598. He was an amiable prince, but had not abilities to qualify him to correct the errors of his father's government. He entrusted all his affairs to the management of the D. of Lerma; during whose administration a peace was made with England, and a truce with the Dutch. He was guilty of a piece of great impolicy and injustice in expelling all the Moors from Grenada, and the adjacent provinces; in consequence of which a large tract

of country was depopulated and has remained a desert ever since. See *SPAIN*. Philip died in 1621. (21.) *PHILIP IV.* K. of Spain, was born in 1605, and succeeded his father Philip III. in 1621. The war was renewed against the Dutch, who proved very successful. Philip next entered into a war with France, in which he was equally unfortunate. See *SPAIN*. He died in 1665, aged 60.

(22.) *PHILIP V. D.* of Anjou, the 2d son of Lewis, Dauphin of France, succeeded to the crown of Spain, by the last will of Charles II. in 1700. The house of Austria, being thus excluded from the succession, entered into a war with Spain, and was supported by England. Lewis XIV. defended the right of his grandson, and after a long struggle, Philip was confirmed K. of Spain by the treaty of Utrecht, in 1713. In 1734, Philip invaded Naples, and wrested that kingdom from the Imperialists, in favour of his son Pr. Charles. He died in 1746, and was succeeded by his son Ferdinand VI.

PHILIPPEAU, an island of N. America, in the NW. part of Lake Superior; 24 miles in circumference.

PHILIPPEAU, or *PHILYPEAUX*, John Frederick, count of *MAUREPAS*, a French statesman, born in 1701, and in 1715, at the age of only 14, appointed Secretary at court. In 1738, he became superintendant of the marine, and in 1738 minister of state, but in 1749, he was banished to Bourges, by the intrigues of a lady at court. In 1774 he was recalled to the ministry by Lewis XVI, who placed great confidence in him. He was a man of profound learning, and great liberality; but has been blamed by the friends of the unfortunate house of Bourbon, for the advice he gave the king, to assist the American republicans to throw off their dependance on Great Britain. He did not live to see the consequences, as he died in 1781.

PHILIPPEVILLE, a town of France, in the dep. of the Ardennes, anciently called Corbigny, till Mary of Austria fortified it, in 1577, and named it *Philippeville*, in honour of Philip II. of Spain. Its fortifications were renewed by Lewis XIV. It is 12 miles NW. of Givet, and 36 N. of Charleville.

PHILIPPI, in ancient geography, a town of Macedonia, in the territory of the Edones, on the confines of Thrace, situated on the side of a steep eminence; anciently called *Datum* and *Drenides*, (*Appian*), though Strabo seems to distinguish them. This town was famous on several accounts; not only as taking its name from the celebrated Philip II. of Macedon, who considered it as a fit place for carrying on the war against the Thracians; but also on account of two battles fought in its neighbourhood between Augustus and the republican party. In the first of these battles, Brutus and Cassius had the command of the republican army; while Octavianus, afterwards Augustus, and Marc Antony, had the command of their adversaries. The army of Brutus and Cassius consisted of 19 legions and 20,000 horse; the imperial forces of an equal number of legions, but more complete, and 13,000 horse; so that the numbers on both sides were pretty equal. The troops of Brutus were very richly dressed, most of them having their ar-

mour adorned with gold and silver; for Brutus, though very frugal in other respects, was thus extravagant with respect to his men, thinking that the riches that they had about them would make them exert themselves the more, to prevent these from falling into the enemy's hands. Both the republican generals appear to have been inferior in skill to Mark Antony; for as to Octavianus, he is allowed never to have conquered but by the valour of others. A little before the first engagement, Octavianus, who had been indisposed, was carried out of the camp at the persuasion of Artorius his physician, who had dreamed that he saw a vision directing him to be removed. Brutus's men, who opposed the wing commanded by Octavianus, charged without orders, which caused great confusion. However, they were successful; for part of them, taking a compass about, fell upon the enemy's rear: after which they took and plundered the camp, making a great slaughter of such as were in it, and among the rest putting 2000 Lacedæmonians to the sword, who had newly come to the assistance of Octavianus. The emperor himself was fought for, but in vain, having been conveyed away for the reasons above mentioned; and as the soldiers pierced the litter in which he was usually carried, it was thence reported that he had been killed. This threw that whole part of the army into such consternation, that when Brutus attacked them in front, they were most completely routed; three whole legions being cut in pieces, and a prodigious slaughter made among the fugitives. But by the imprudence of the general in pursuing too far, the wing of the republican army commanded by Cassius was left naked and separated from the rest of the army; on which they were attacked at once in front and in flank, and thus they were defeated, and their camp taken, while Brutus imagined that he had gained a complete victory. Cassius himself retired to an eminence at a small distance from Philippi; whence he sent one of his greatest intimates to procure intelligence concerning the fate of Brutus. That general was on his way, and already in view, when the messenger set out. He soon met his friends; but they surrounding him to inquire the news, Cassius, who beheld what passed, imagined that he was taken prisoner by the enemy, retired to his tent, and in despair caused one of his freed men cut off his head. Thus far at least is certain, that he went into the tent with that freed man, and that his head was found separated from his body when Brutus entered. However, the freedman was never afterwards seen. The 2d engagement was pretty similar to the first. Brutus again opposed Octavianus, and met with the same success; but in the mean time Antony, to whom he ought undoubtedly to have opposed himself, having to do only with the lieutenants of Cassius, gained a complete victory over them. What was worst, the fugitives, instead of leaving the field of battle altogether, fled for protection to Brutus's army; where, crowding in among the ranks, they carried despair and confusion wherever they went, so that a total defeat ensued, and the republican army was almost entirely cut in pieces. After the battle, Brutus put an end to his own life. See **ROME**. The city of Philippi is likewise remarkable on account of an

epistle written by St Paul to the church in that place. It was a Roman colony. (Lukæ, Pliny, Coin. Inscription.) It is also remarkable for being the birth place of Adrastus, the peripatetic philosopher, and disciple of Aristotle.—The town is still in being, and is an archbishop's see; but greatly decayed and badly-peopled. However, there is an old amphitheatre, and several other monuments of its ancient grandeur. Lon. 44. 55. E. Lat. 41. 0. N.

(1.) ***PHILIPPIC**, *n. f.* [from the invectives of Demosthenes against Philip of Macedon.] Any invective declamation.

(2.) **PHILIPPICS**, *n. f.* [*φιλιππικὴ λογιὰ*], in literature, a name which is given to the orations of Demosthenes against Philip II. king of Macedon. The Philippics are reckoned the master-pieces of that great orator: Longinus quotes many instances of the sublime from them; and points out a thousand latent beauties. Indeed that pathetic in which Demosthenes excelled, the frequent interrogations and apostrophes wherewith he attacked the indolence of the Athenians, could be nowhere better employed. Whatever delicacy there be in the oration against Leptines, the Philippics have the advantage over it, were it only on account of the subject, which gives Demosthenes so fair a field to display his chief talent, we mean, with Longinus, that of moving and astonishing. Dionysius Halicarnassæus ranks the oration on the Halonese among the Philippics, and places it the 8th in order: but though his authority be great, yet that force and majesty wherein Cicero characterises the Philippics of Demosthenes, seem to exclude the oration on the Halonese out of the number: and authorise the almost universal opinion of the learned, who reject it as spurious. Libanius, Photius, and others, but above all the languidness of the style, and the lowness of the expressions, which reign throughout the whole, rather it on Hegesippus.

(3.) **PHILIPPICS** are likewise applied to the 14 orations of Cicero against Mark Antony. Cicero himself gave them this title in his epistles to Brutus; and posterity have found it so just, that it has been continued to our times. Juvenal, Sat. x. calls the 2d the *divine Philippic*, and styles it *conspicue divina Philippica fama*. That orator's entitling his last and most valued orations after the Philippics of Demosthenes shows the high opinion he had of them. Cicero's Philippics cost him his life; Mark Antony having been so irritated with them, that when he arrived at the triumvirate, he procured Cicero's murder, cut off his head, and stuck it up in the very place whence the orator had delivered the Philippics.

PHILIPPINE, a town of France in the dep. of the Scheldt, and ci-devant prov. of Austrian Flanders, seated on an arm of the Scheldt, and strongly fortified. The Dutch seized it in 1633 and augmented its fortifications. In 1747, it was taken by the French, under Count Lowendal: but restored by the treaty of Aix la Chapelle. On the 23d Oct. 1794, it was taken by the French republicans, under Gen. Michaud. It is 15 miles N. of Ghent, and 20 ENE. of Bruges.

PHILIPPINE ISLANDS, or } certain islands of
(1) **PHILIPPINES**, } Asia, which lie
between 114 and 126 degrees of east longitude,
and

and between 6° and 20° of N. lat. about 300 miles SE. of China. They are said to be about 1200 in number, of which there are 400 very considerable. They form a principal division of that immense Indian Archipelago, which consists of so many thousand islands, some of which are the largest, and many of them the richest, in the world. The Philippines form the northernmost cluster of these islands, and were discovered in the year 1521 by the famous navigator Ferdinand Magellan, a Portuguese gentleman, who had served his native country both in the wars of Africa and in the East Indies; particularly under Albuquerque, the famous Portuguese general, who reduced Goa and Malacca to the obedience of that crown. Magellan having had a considerable share in those actions, and finding himself neglected by the government of Portugal, and even denied, as it is said, the small advance of a ducat a month in his pay, left the court of Portugal in disgust, and offered his services to Charles V. then emperor of Germany, and king of Spain, whom he convinced of the probability of discovering a way to the Spice Islands, in the East Indies, by the west; whereupon the command of five small ships being given him, he set sail from Seville, on the 10th of August 1519, and standing over to the coast of South America, proceeded southward to 52°, where he fortunately hit upon a strait, since called the STRAIT of MAGELLAN, which carried him into the Pacific Ocean or South Sea, (See MAGELLAN, N° 2.) and then steering northward, repassed the equator: after which, he stretched away to the west, across that vast ocean, till he arrived at Guam, one of the Ladrões, on the 10th of March 1521; and soon after failed to the westward, and discovered the Philippines, which he did on St Lazarus's day; and, in honour of that saint, he called them the *Archipelago of St Lazarus*. He took possession of them in the name of the king of Spain, but was killed in a skirmish with the natives of one of them. His people, however, arrived afterwards at the Moluccas, or Clove Islands, where they left a colony, and returned to Spain by the way of the cape of Good Hope; being the first persons that ever sailed round the globe. But there was no attempt made by the Spaniards to subdue or plant the Philippine Islands until 1564, in the reign of Philip II. son of Charles V. when Lewis de Velasco, viceroy of Mexico, sent Michael Lopez Delgaspes thither with a fleet, and a force sufficient to make a conquest of these islands, which he named the *Philippines*, in honour of Philip II. then king of Spain; and they remained under the dominion of that crown till taken by Sir William Draper. The Philippines are scarce inferior to any other islands of Asia in all the natural productions of that happy climate; and they are by far the best situated for an extensive and advantageous commerce. By their position, they form the centre of intercourse with China, Japan, and the Spice Islands; and whilst they are under the dominion of Spain, they connect the Asiatic and American commerce, and become a general magazine for the rich manufactures of the one, and for the treasures of the other. Besides, they are well si-

tuated for a supply of European goods, both from the side of Acapulco and by the way of the Cape of Good Hope. In fact, they formerly enjoyed a traffic in some degree proportioned to the peculiar felicity of their situation; but the Spanish dominion is too vast and unconnected to be improved to the best advantage. The trade of the Philippines is thought to have declined; its great branch is now reduced to two ships, which annually pass between these islands and Acapulco in America, and to a single port of Manila in the island of Luconia. Instead of taking Spanish manufactures, they trade with the Chinese for spices, silks, stockings, Indian stuffs, calicoes, chintz, and many other articles; and with the Japanese for cabinets, and all sorts of lacquered ware; for all which they pay in gold or silver. All these commodities, together with what the islands produce, and great quantities of wrought plate by the Chinese artisans, are collected at Manila, and transported annually in two ships to Acapulco in Mexico. Each of these ships is esteemed worth 600,000. sterling; and in the war which began in 1739, and which was not distinguished by such a series of wonderful successes as that which ended in 1763, the taking of one of the galleons which carry on the trade between Manila and America, was considered as one of the most brilliant advantages which we gained. This trade is not laid open to all the inhabitants of Manila, but is confined by very particular regulations, somewhat analogous to those by which the trade of the register ships from Cadiz to the West Indies is restrained. The ships employed are all king's ships, commissioned and paid by him; and the tonnage is divided into a certain number of baies, all of the same size. Most of the religious are concerned in this trade, and sell to the merchants at a great price what room in the ship they are not to occupy. This trade is by a royal edict limited to a certain value, but it always exceeds it, each ship being generally worth 3,000,000 of dollars. The returns made from America are in silver, cochinal, sweetmeats, together with some European millinery ware for the women, and some strong Spanish wine. It is obvious, that the greatest part of the treasure remitted does not remain at Manila, but is dispersed over India for goods. Many strong remonstrances against this Indian trade to Mexico have been made to the court of Spain, wherein they urge, that the silk manufactures of Valencia and other parts of Spain, the linens from Cadiz, and their other manufactures, are hurt in their sale in Mexico and Peru, by the Chinese being able to afford them goods of the same sort cheaper than they are able; that were this trade laid open, the whole treasure of the New World would centre in Spain, or with European merchants. At Cavite in this bay are a fort, a town, and a fine dock-yard, where these large galleons are built and repaired, and where they load and unload, together with all the other large ships that trade to this bay. The principal of the Philippine islands are Luconia or Manila, Tandago or Samul, Macbate, Mindora, Marindugera, Luban, Paragoa, Panay, Negro's Island, Leyle, Bohol, Sibu, Sogbu,

bu, Negros, St John, Xolo, and Mindanao. In most of these, the Spanish power prevails, and all are under the governor of Luconla; but there are some in which that nation has little authority, or even influence, such as Mindanao. The inhabitants of these islands consist of Chinese, Ethiopians, Malays, Spaniards, Portuguese, Pintados or Painted People, and Mestees, a mixture of all these. Their persons and habits resemble those of the several nations whence they derive their original; only, it is observable, that the features of the blacks of these islands are as agreeable as those of the white people. There is not a soil in the world that produces greater plenty of all the necessaries of life; as appears by the multitude of inhabitants in the woods and mountains, who subsist almost entirely by the fruits of the earth, and the venison they take. Nor can any country appear more beautiful; for there is a perpetual verdure, and buds, blossoms, and fruit, are found upon the trees all the year round, as well on the mountains as in the cultivated gardens. Vast quantities of gold are washed down from the hills by the rains, and found mixed with the sand of their rivers. There are also mines of other metals, and excellent load-stones found here; and such numbers of wild buffaloes, that a good huntsman on horseback, armed with a spear, will kill 10 or 20 in a day. The Spaniards take them for their hides, which they sell to the Chinese; and their carcases serve the mountaineers for food. Their woods also abound with deer, wild hogs, and goats. Of the last, there is such plenty in one of these islands, that the Spaniards gave it the name of *Cabras*. Horses and cows have been likewise imported into these islands, from New Spain, China, and Japan, which have multiplied considerably; but the sheep that were brought over degenerated. The trees produce a great variety of gums; one kind, which is the commonest, by the Spaniards called *brea*, is used instead of pitch; of the others some are medicinal, others odoriferous. In those islands are monkeys and baboons of a monstrous bigness, that will defend themselves if attacked by men. When they can find no fruit in the mountains, they go down to the sea to catch crabs and oysters; and that the oysters may not close and catch their paws, they first put in a stone to prevent their shutting close; they take crabs by putting their tail in the holes where they lie, and when the crab lays hold of it, they draw him out. There are also great numbers of civet-cats in some of the islands. The bird, called *tavan*, is a black sea fowl, something less than a hen, and has a long neck; it lays its eggs in the sand by the sea side, 40 or 50 in a trench, and then covers them, and they are hatched by the heat of the sun. The bird *saligan* builds her nest on the sides of rocks, as the swallows do against a wall; and these are the delicious BIRDS NESTS so much esteemed. (See BIRDS NESTS, § 4.) The Spaniards have introduced several of the American fruits, the cocoa or chocolate nut particularly, which increases so that they have no occasion now to import it from Mexico. Here is also the FOUNTAIN-TREE, from which the natives draw water; and a kind of cane, by the Spaniards called *casaca*,

which, if cut, yields fair water enough for a draught; of which there are plenty in the mountains, where water is most wanted. These islands being hot and moist, produce many venomous creatures, as the soil does poisonous herbs and flowers, which do not kill those who touch or taste them, but so infect the air, that many people die in the time of their blossoming. Their orange, lemon, and several other trees, bear twice a year. A sprig, when planted, becomes a tree, and bears fruit in a year. The woods are filled with trees, which yield more sustenance to man, than is to be found in almost any other part of the world. These islands, however, besides other inconveniences, are very subject to earthquakes, which often prove very fatal. See MANILA.

(2) PHILIPPINES, a religious society of young women at Rome, so called from their taking St Philip de Neri for their protector. (See NERI, N° 2.) The society consists of 100 poor girls, who are brought up till they are of age to be married, or become nuns, under the direction of some religious women, who teach them to read, write, and work, and instruct them in the duties of Christianity. They wear a white veil, and a black cross on their breasts.

(3) PHILIPPINES, NEW, or PALAOS, or PATAOS, a cluster of islands, in the E. Indian Ocean, between the Moluccas, the Old Philippines, (N° 1.) and the Ladrones, and between the equator and the tropic of Cancer. They are about 87 in all, but are little known to Europeans.

PHILIPPISTS, a sect among the Lutherans; the followers of Philip Melancthon. He had strenuously opposed the *Ubiquists*, who arose in his time; and the dispute growing still hotter after his death, the university of Wittenberg, who espoused Melancthon's opinion, were called by the Flacians, who attacked it, *Philippists*.

PHILIPPOLI, } or FILIPPOLI, a con-
PHILIPPOPEL, } siderable town of Euro-
PHILIPPPOPOLI, } pean Turkey, in Roma-
PHILIPPPOPOLIS, } nia, on the Maritz,
where it becomes navigable; built by Philip II. of Macedonia. It is chiefly inhabited by Greeks; and lies 82 miles NW. of Adrianople, and 188 WNW. of Constantinople. Lon. 24. 50. E. Lat. 42. 15. N.

PHILIP, ST. See NERI, N° 2.

(1.) PHILIPS, Ambrose, an English poet, descended from a very ancient family in Leicestershire. He was educated at St John's college, Cambridge; where he wrote his pastorals, which acquired him at the time so high a reputation. His next performance was, *The Life of Archbishop Williams*, written, according to Mr Cibber, to make known his political principles, the archbishop, who is the hero of his work, being a strong opponent to the high church measures. When he quitted the university, and came to London, he became a constant attendant at Button's coffee-house, where he became intimate with the most celebrated geniuses of that age, particularly of Sir Richard Steele, who, in the first volume of his *Tatler*, inserted a poem of Mr Philips's, called a *Winter Piece*, dated from Copenhagen, on which he bestows the highest encomiums; and, indeed, so much justice is in these his commendations,

tions, that even Mr Pope himself, who had a fixed aversion for the author, while he affected to despise his other works, used always to except this. He wrote several dramatical pieces; *The Briton*, *Distressed Mother*, and *Humphrey Duke of Gloucester*; all of which met with success, and one of them is still a standard of entertainment at the theatres, being generally repeated several times every season. Mr Philips's circumstances were in general, not only easy, but affluent, from his being connected, by his political principles, with persons of great consequence. He was concerned with Dr Hugh Boulter, afterwards archbishop of Armagh, the R. H. Richard West, Esq. lord chancellor of Ireland, bishop Burnet, and the rev. Henry Stephens, in writing a series of papers called the *Free Thinker*, which were all published together by Mr Philips, in 3 vols. 12mo. In the end of Queen Anne's reign, he was secretary to the Hanover club, a set of noblemen and gentlemen who had formed an association in honour of that succession, and for the support of its interests. Mr Philips's station in this club, with the zeal shown in his writings, recommended him to the favour of the new government. He was, soon after the accession of king George I. put into the commission of the peace, and appointed a commissioner of the lottery. And, on Dr Boulter's being made primate of Ireland, he accompanied that prelate across St George's channel, where he got considerable preferments, and was erected a member of the House of Commons for Armagh. At length, having purchased an annuity for life of 400*l.* per annum, he came over to England some time in 1748; but died soon after, at his lodgings near Vauxhall, in Surry. "Of his personal character (says Dr Johnson) all I have heard is, that he was eminent for bravery, and skill in the sword, and that in conversation he was solemn and pompous."

(2.) PHILIPS, Catharine, a very ingenious lady, daughter of Mr John Fowler, merchant, born at London in Jan. 1631, and educated at Hackney. She married James Philips of the priory of Cardigan, Esq. and went with the viscountess of Dungannon into Ireland, where she translated Corneille's tragedy of Pompey into English, which was several times acted there with great applause. She translated also the 4 first acts of Horace, another tragedy of Corneille, the 5th being done by Sir John Denham. This excellent and amiable lady died of the smallpox in London, 22d June 1664, much and justly regretted; "having not left (says Langbaine) any of her sex her equal in poetry."

(3.) PHILIPS, Fabian, was author of several books relating to ancient customs and privileges in England. He was born at Prestbury in Gloucestershire, Sept. 28th, 1601. He studied in the inns of Chancery, and the Middle Temple, where he became learned in the law. In the civil wars, he was a bold assertor of the king's prerogative; and two days before Charles I. was beheaded, he wrote a protestation against the intended murder, and caused it to be printed, and affixed to posts in all public places. He likewise published, in 1649, 4to, a pamphlet entitled, "*Veritas Incon-*

cussa; or King Charles I. no Man of Blood, but a Martyr for his People;" which was reprinted in 1660, 8vo. In 1653, when the courts of justice at Westminster, especially the Chancery, were voted down by Oliver's parliament, he published, "Considerations against the dissolving and taking them away;" for which he received the thanks of William Lenthall, Esq. speaker of parliament. He was for some time filazer for London, Middlesex, Cambridgeshire, and Huntingdonshire; and spent much money in searching records, and writing in favour of the royal prerogative. The only reward he received, was the place of one of the commissioners for regulating the law, worth 200*l.* per annum, which only lasted two years. After the restoration, when the bill for taking away the tenures was depending in parliament, he wrote and published a book to show the necessity of preserving them, entitled, "*Tenenda non tollenda*; or, the Necessity of preserving Tenures in capite, and by Knight's-service, which were a great part of the *salus populi*, &c. 1660," 4to. In 1663 he published, "The Antiquity, Legality, Reason, Duty, and Necessity, of Preemption and Pourveyance for the King," 4to; and afterwards many other pieces upon similar subjects. He assisted Dr Bates in his *Blenheim Motuum*. He died Nov. 17th, 1690, in his 89th year; and was buried at Twyford in Middlesex. He was a man well acquainted with records and antiquities; but his manner of writing is neither close nor well digested. He published a political pamphlet in 1681, entitled, "*Urfa Major et Minor*;" showing that there is no such Fear, as is factiously pretended, of Popery and arbitrary Power."

(4.) PHILIPS, John, an eminent English poet, was born in 1676. He was educated at Winchester and Oxford. The first poem which distinguished our author, was his *Splendid Shilling*, published in 1705. His next was *Blenheim*. In 1706, he finished another poem upon *cyder*. He also wrote a Latin ode to Henry St John, Esq. which is esteemed a masterpiece. He was courting greater things; but his health failing, he was obliged to drop every thing but the care of it. This care, however, did not save him; for, after lingering a long time, he died at Hereford, Feb. 15. 1708, of a consumption and asthma, before he had reached his 33d year. He was interred in the cathedral of that city, and had a monument erected to his memory in Westminster abbey, by Sir Simon Harcourt, afterwards lord chancellor, with an epitaph written by Dr Atterbury. He was one of those few poets whose muse and manners were equally excellent and amiable, in a very eminent degree.

(5.) PHILIPS, John, another English poet, nephew of the celebrated Milton, who wrote several things, particularly some memoirs of his uncle, and part of Virgil Traversed.

(6.) PHILIPS, John, another English poet, contemporary with the two preceding, who was the author of two political farces, both printed in 1716: 1. The Earl of Marr married, with the Humours of Jocky the Highlander. 2. The Pretender's Flight; or a Mock Coronation;

nation; with the Humours of the facetious Harry St John.

(7.) PHILIPS, Thomas, a learned English Catholic, born at Ickford, in Buckinghamshire, in 1708, and educated at Louvain. He was afterwards sent over as a missionary to England, where he published a *Letter to a Student in Divinity*, and other tracts. But the work for which he is most celebrated is his *Life of Cardinal Pole*, in 2 vols. 8vo. wherein he endeavoured to soften the harsh features of popery, and to wash his church from her stains of blood and tyranny. Several English divines published answers to this work, particularly Dr Neve, Dr Gloster Ridley, &c. Philips died at Leige, in 1774.

PHILIPSBURG, an imperial town of Germany, in the circle of the Upper Rhine. It is very strong, and looked upon as one of the bulwarks of the empire. It is seated in a morass, and fortified with 7 bastions, and several advanced works. The town belonged formerly to the bishop of Spire, and all the works of the fortifications to the empire; but as in the division of the indemnities by Bonaparte, in Aug. 1802, that part of the secularized bishopric of Spire which lies on the E. bank of the Rhine was allotted to the *elector of Baden*, Philipsburg appears to be now the property of that prince. It has been several times taken and retaken, particularly by the French in 1734, when the duke of Berwick was killed at the siege; but it was rendered back the year following, in consequence of the treaty of Vienna. It is seated on the river Rhine, over which there is a bridge, 7 miles S. of Spire, 22 SE. of Worms, and 40 NE. of Strasburg. Lon. 8. 33. E. Lat. 49. 12. N.

PHILIP'S NORTON, a town of Somersetshire, with a market on Thursday; 7 miles S. of Bath, and 104 W. of London. Lon. 2. 16. W. Lat. 51. 16. N.

PHILIPSTADT, a town of Sweden, in Warmland, in the midst of a hilly country, abounding with iron mines, seated between two lakes, upon a small river. It was built by Charles IX. and named after his son Philip. It was burnt in 1694; rebuilt, and again burnt in 1775; but again rebuilt. It is 20 miles NE. of Carlstadt, and 140 NW. of Stockholm. Lon. 14. 10. E. Lat. 59. 30. N.

PHILIPSTON, or } a borough of Ireland,
(1.) PHILIPSTOWN, } in King's County, where the assizes are held. It sent two members to the ci-devant Irish parliament. It is 15 miles N. of Kildare, 17 N. of Maryborough, and 38 SW. of Dublin. Lon. 7. 20. W. Lat. 53. 18. N.

(2.) PHILIPSTOWN, a township of New York, in Dutchess County, on the E. bank of Hudson's River, 28 miles above New York. In 1796, it contained 2079 inhabitants, of whom 347 were electors, and 25 slaves. It has a silver mine.

PHILIPVILLE, a town of France, in the dep. of the North, and ci-devant prov. of French Hainault, on an eminence; 25 miles SE. of Mons, and 125 N. by E. of Paris. Lon. 4. 24. E. Lat. 50. 7. N.

PHILISTÆA, in ancient geography, the country of the PHILISTINES: which lay along the Mediterranean, from Joppa to the boundary of Egypt, and extending to inland places not far from

the coast. It is also called PALESTINA, (*Josephus*.) a name afterwards applied to the whole of the Holy Land. See PALESTINA.

PHILISTÆI, or } the people of Philistæa, call-
PHILISTIM, } ed also *Caphtorim* and *Philistini*, originally from Egypt, and descendants of Ham. (*Moses*.) They expelled and destroyed the Hivites the ancient inhabitants, and occupied their country; that is, the regions which retained the name of *Philistim*, in which that of *Caphtorim* was swallowed up.

PHILISTINES, } the ancient inhabitants of
PHILISTINI, } Palestine, well known in sacred history. The people are sometimes called in Scripture CHERETHITES and CAPHTORIMS. The earlier part of their history is, like that of most other nations, very obscure and uncertain. The authors of the Universal History tell us, that they were descended from the Caslubim partly, and partly from the Caphtorim, both from Mizraim the son of Ham, the son of Noah. Moses tells us, (*Deut. xi. 23.*) that they drove out the Avim or Avites even to Azzah or Gazah, where they settled; but when this happened cannot be determined. But our learned authors are clearly of opinion, that the Caslubim and Caphtorim, from whom the Philistines are descended, came originally from Egypt, and called the country which they had conquered by their own name. (See PALESTINE.) Many interpreters, however, think that CAPHTOR was but another name for CAPPADOCIA, which they imagine to have been the original country of the Philistines. But Father Calmet, in a particular dissertation prefixed to the first book of Samuel, endeavours to shew that they were originally of the isle of Crete. The reasons which led him to think that Caphtor is the isle of Crete, are as follow: The Philistines were strangers in Palestine, as appears in various parts of Scripture; such as *Gen. x. 14. Deut. ii. 23. Jer. xlvii. 4. and Amos ix. 7.* whence the Septuagint always translate this name *Strangers*. Their proper name was Cherethims. See *Ezekiel, xxv. 16. Zeephaniah, ii. 5. and 1 Samuel, xxx. 14.* The kings of Judah had foreign guards called the *Cberethites* and *Pelethites*, who were of the number of the Philistines. (*2 Sam. xv. 18.*) The Septuagint, under the name *Cberethites*, understood the *Cretans*; and by *Cbereth* they understood *Crete*. Besides, the Scripture says, that the Philistines came from the isle of Caphtor. Now we see no island in the Mediterranean, wherein the marks whereby the Scripture describes Caphtor and Cherethim agree better than in the isle of Crete. The name *Cretim* or *Cheretibim* is the same with that of *Cretenses*. The Cretans are one of the most ancient and celebrated people who inhabited the islands of the Mediterranean. They pretended to have been produced originally out of their own soil. This island was well peopled in the time of the Trojan war. Homer calls it the island with 100 cities. The city of Gaza in Palestine went by the name of *Minoa* (*Steph. Byzant. in Gaza*), because Minos king of Crete coming into that country, called this ancient city by his own name. Herodotus acknowledges that the Cretans were originally all barbarians, and did not come from Greece. Homer says, that a different language

was spoken in the isle of Crete; that there were Greeks there, true or ancient Cretans, Pelasgians, &c. The ancient Cretans are the same as the Chetethites, the Pelasgians as the Philistines or Pelethites of the Scripture: their language was the same with that of the Canaanites or Phœnicians, that is, Hebrew; they were defended, as well as Canaan, from Ham, by Mizraim. (Gen. x. 6, 13, 14.) The manners, arms, religion, and gods of the Cretans and Philistines were the same. The arms of both were bows and arrows. Dagon the god of the Philistines was the same as the Dictynna of the Cretans. But Mr Wells does not think these arguments convincing. He is of the same opinion with the authors of the Universal History, who say, that *Coptus*, the name of an old city of Egypt, is a corruption of the ancient *Caphtor*. But whether they came from Crete, from Cappadocia, or from Egypt, they had certainly been a considerable time in the land of Canaan when Abraham arrived there, in the year of the world 2083. They were then a very powerful people, were governed by kings, and in possession of several considerable cities. Several of their kings then in power were named *Abimelech*. This race, however, was but of short duration, for their monarchy was changed to an aristocracy of five lords, who were partly independent of each other, though they acted in concert for the common cause. This form of government was again succeeded by another race of kings, among whom the prevailing names were *Achish* and *Abimelech*. They were not comprehended in the number of nations devoted to extermination, and whose territory the Lord had promised to the Hebrews; nor were they of the cursed seed of Canaan. However, Joshua gave their lands to the Hebrews. (Josh. xv. 45—47. and xiii. 1, 3.) But these conquests of Joshua must have been ill maintained, since under the Judges, under Sam, and at the beginning of the reign of David, the Philistines oppressed the Israelites. Shamgar, Samson, Samuel, and Saul, indeed made head against them, but did not reduce their power; and they continued independent down to the reign of David, who conquered them. They continued in subjection to the kings of Judah down to the reign of Jehoram, son of Jehoshaphat; that is, for about 246 years. However, Jehoram made war against them, and probably reduced them to his obedience again: as they revolted again from Uzziah, who kept them in subjection during his reign. (2 Chr. xxi. 16. and xxvi. 6, 7.) During the unfortunate reign of Ahaz, the Philistines made great havoc in the territories of Judah; but his son Hezekiah subdued them. (2 Chr. xxviii. 18. and 2 Kings xviii. 8.) Lastly, they regained their full liberty under the latter kings of Judah; and we find from the vengeance denounced against them by the prophets Isaiah, Amos, Zephaniah, Jeremiah, and Ezekiel, that they brought many hardships and calamities upon the children of Israel: for which cruelties God threatened to punish them. Elishaddon besieged Ashdod, and took it (Isa. xx. 1.) And according to Herodotus, Psammetichus king of Egypt took the same city, after a siege of 29 years. There is great probability, that Nebuchadnezzar, when he subdued the Ammonites, Moabites, Egyptians,

and other nations, bordering upon the Jews, reduced also the Philistines. After this, they fell under the dominion of the Persians; then under that of Alexander the Great, who destroyed Gaza, the only city of Phœnicia that durst oppose him. After the persecution of Antiochus Epiphanes the Asmonæans subjected under their obedience several cities of the Philistines; and Tryphon gave to Jonathan Maccabæus the government of the whole coast of the Mediterranean, from Tyre as far as Egypt, which included all the country of the Philistines.

PHILISTIS, an ancient queen, whose coin is still extant, but of whose life, reign, country, and government, nothing is recorded, or can now be ascertained. Her coin is also mentioned by Herodotus, which shows that she must have flourished before the time of that ancient historian, but nothing else is recorded by him respecting her. Mr Pinkerton thinks she reigned in Sicily, and as a confirmation of this conjecture mentions some inscriptions of ΒΑΣΙΛΙΣΣΑΣ ΦΙΛΙΣΤΙΑΔΟΣ on the *Græni* of the theatre at Syracuse; but which do not appear to be older than the times of the Romans. Some authors think she reigned in Malta or Cossara, but Mr Pinkerton does not think this probable.

PHILISTUS, an ancient historian, born in Syracuse. He enjoyed the friendship of Dionysius; but being afterwards exiled, he wrote a History of Sicily, in 12 books, which was much admired. He was afterwards recalled, and sent against the Syracusans by Dionysius the younger, but, being defeated, killed himself; A. A. C. 356. *Plut. Diad.*

PHILIP ISLANDS, two islands in the S. Pacific Ocean, discovered by Capt. Hunter, in 1791, and named after Arthur Philip, Esq. governor of New S. Wales. They are 5 miles asunder, but almost joined by a long narrow sand bank, which projects above water, and reaches for about two 3ds of the distance from the E. or largest island to the W. one, which is smallest. They are covered with shrubs, but have few tall trees, and the land is low. They have some inhabitants. The largest or easternmost island lies in Lon. 143. 3. E. Lat. 8. 6. N.

PHILLIS. See PHYLIS.

PHILLYREA, *MOCK PRIVET*; a genus of the monogynia order, belonging to the diandria class of plants; and in the natural method ranking under the 44th order, *Seplaria*. Each flower contains two males and one female. Some say there are 7 species, all shrubby plants, and natives of France or Italy. Others reckon only 3 species, viz.

1. PHILLYREA ANGUSTIFOLIA, the *narrow-leaved phillyrea*, or *mock privet*, a deciduous shrub, native of Spain and Italy. This is of low growth seldom rising higher than 8 or 10 feet. The branches are few and slender, but they are beautifully spotted with grey spots. The leaves stand opposite by pairs. They are long and narrow, spear-shaped, and undivided, of a deep green colour, and of a thick consistence. The edges are entire, and they stand on short footstalks. The flowers make no show. They are whitish, and grow in clusters from the wings of the branches, in March, and are succeeded by small round black

berries. The varieties of this species are, the *rosemary phillyrea*, *lavender phillyrea*, *STRIPED PHILLYREA*, &c.

2. *PHILLYREA LATIFOLIA*, the *broad leaved phillyrea*, or *mock privet*, a tall evergreen shrub, a native of the south of Europe. It will grow to about 12 feet high. The branches are strong and upright. The bark is of a grey colour, spotted with white, which has a pretty effect; and the leaves grow opposite by pairs. They are of a heart-shaped oval figure, of a thick consistence, and a strong dark green colour. Their edges are sharply serrated, and they stand on short strong footstalks. The flowers grow from the wings of the leaves in clusters in March. They are of a kind of greenish-white colour, make no show, and are succeeded by small round black berries. There are three varieties; viz. the *ilex-leaved phillyrea*, the *prickly phillyrea*, and the *olive phillyrea* with slightly serrated edges.

3. *PHILLYREA MEDIA*, the *oval-leaved phillyrea*, or *mock privet*, or the *medial-leaved phillyrea*, a tall evergreen shrub, native of the South of Europe. It has also three varieties, viz. 1. the common *smooth-leaved phillyrea*. This plant grows to 12 or 14 feet high, and the branches are very numerous. The older branches are covered with a dark brown bark, but the bark on the young shoots is of a fine green colour. They are oval, spear-shaped, and grow opposite, by pairs, on strong short footstalks. The flowers are produced in clusters from the wings of the young branches. They are small, and of a greenish-white colour; they appear in March, and are succeeded by berries, which are first green, then red, and black in autumn when ripe. 2. The *privet-leaved phillyrea* grows to 10 or 12 feet high, and the branches are covered with a brown bark. The leaves a little resemble the privet; they are of a fine green colour, and grow by pairs on the branches. They are of a lanceolate figure, and their edges are entire, or nearly so; for some signs of serratures sometimes appear. The flowers grow in clusters in March. They are whitish, and are succeeded by small black berries. 3. The *olive-leaved phillyrea* is the most beautiful of all the sorts. It will grow to about 10 or 12 feet high; and the branches, which are not numerous, spread abroad in a free easy manner, which give the tree a fine air. They are long and slender, covered with a light brown bark; and on these the leaves stand opposite by pairs at proper intervals, on short footstalks. They resemble those of the olive-tree, and are of a delightful green. Their surface is exceeding smooth, their edges are entire, and the membrane of a thickish consistence. The flowers are small and white, and like the other sorts make no show. They are succeeded by single roundish berries. All these species may be either propagated by seeds or layers. 1. By seeds. These ripen in autumn, and should be sown soon after. The mould must be made fine; and if it is not naturally sandy, if some drift sand be added, it will be so much the better. The seeds for the most part remain until the second spring before they come up; and if they are not sown soon after they are ripe, some will come up even the third spring after. They must be sown about an inch deep; and during the

following summer should be kept clean from weeds. After they are come up, the same care must be observed, and also watering in dry weather; and if the beds are hooped, and the plants shaded in the hottest season, so much the better. But at the approach of winter they must be hooped, and the beds covered with mats in the hardest frosts, otherwise there will be danger of losing the whole crop; for these trees, though they are very hardy when grown tolerably large, are rather tender whilst seedlings. They should remain in the seed beds with this management for two summers; and then waiting for the first autumnal rains in September or October (and having prepared a spot of ground), they should at that juncture be planted out, on which they will immediately strike root. The distance from each other need not be more than a foot, if they are not designed to remain long in the nursery. If there is a probability of their not being wanted for some years, they should be allowed near double that distance; and every winter the ground in the rows should be well dug, to break their roots, and cause them to put out fresh fibres, otherwise they will be in danger of being lost when brought into the shrubbery quarters. 2. By layers they will easily grow. The autumn is the best time for this operation, and the young shoots are fit for the purpose. The best way of layering them is by making a slit at the joint; though they will often grow well by a twist being only made. When the gardener chooses the method of twisting a young branch for the layers, he must be careful to twist it about a joint so as only to break the bark; for if it is too much twisted, it will die. But if it be gently twisted, it will, at the twisted parts, strike root, and by autumn following, as well as those layers that had been slit, will have good root; the strongest of which will be fit for planting where they are wanted to remain, whilst the weaker and worst rooted layers may be planted in the nursery ground like the seedlings, and treated accordingly.

PHILLYREASTRUM, a genus of plants in Vaillant's system of botany; called *MORINDA* by Linnæus.

(1.) *PHILO*, an ancient Greek writer, who was of a noble family among the Jews, and flourished at Alexandria during the reign of Caligula; to whom he was sent at the head of an embassy from the Jews, to defend them against Appion, A.D. 42. The best edition of his works was published at London in 1742 by Dr Mangey, in 2 vols. folio. For farther particulars respecting this celebrated man, see *Josephus's Antiq.*; *Eusebius's Eccl. Hist.*; *St Jerome De Script. Eccles. Fabr. Bibl. Græc. Cave Hist. Liter. and Men. of the Greek Church*, vol. 2.

(2.) *PHILO*, a native of Byblos, a grammarian, who flourished in the first century, and acquired celebrity by his works; the chief of which is *Sanchoniathon's History of Phœnicia*, which he translated into Greek. Some fragments are extant.

(3.) *PHILO*, a celebrated architect and writer of Byzantium, who flourished about A. A. C. 300. He wrote a treatise on *Machines used in War*, which is extant, in the *Mathematici Veteres*, 1693, folio. There is also ascribed to him, but on dubious grounds, a work, entitled, "*De vii. Orbis Spectaculis*;" *Rome*, 1640.

PHILOBÆOTUS.

PHILOBÆOTUS, a mountain of Bœotia.

PHILOCHORUS, an ancient Greek historian, who wrote a history of Athens in 17 books, which has not come down to us. He died A.C. 222.

PHILOCLEES, an admiral of the Athenian fleet during the Peloponnesian war. He recommended to his countrymen to cut off the right hand of such of the enemies as were taken, that they might be rendered unfit for service. His plan was adopted by all the ten admirals except one; but their expectations were frustrated, and, instead of being conquerors, they were totally defeated at Ægospotamos by Lyfander, and Philoclees was put to death with the rest of his colleagues. *Plutarch.*

PHILOCRATES, an ancient author, who wrote a History of Thessaly. *Lempriere.*

PHILOCTETES, in fabulous history, the son of Pæan, was the faithful companion of Hercules; who, at his death, obliged him to swear not to discover the place where his ashes were interred, and presented him with his arrows dipped in the Hydra's blood. The Greeks at the siege of Troy being informed by an oracle that they could never take that city without those fatal arrows, went to Philoctetes, and insisted upon his discovering where he had left his friend; when Philoctetes, to evade the guilt of perjury, let them know where Hercules was entombed, by stamping upon the place; but he was punished for the violation of his oath, by dropping an arrow upon that foot; which, after giving him great agony, was at length cured by Machon. He was afterwards taken by Ulysses to the siege of Troy, where he killed Paris with one of his arrows.

PHILOCYPRUS, a king of Cyprus, in the age of Solon, by whose advice he changed the situation of a city, which, in gratitude to the Athenian legislator, he named Soli.

PHILOLAUS, of Crotona, a celebrated philosopher of antiquity, of the school of Pythagoras, to whom that philosopher's *Golden Verses* have been ascribed. "He was (says Dr Enfield) a disciple of Archytas, and flourished in the time of Plato. It was from him that Plato purchased the written records of the Pythagorean system. Interfering in affairs of state, he fell a sacrifice to political jea-

lousy. Philolaus treated the doctrine of nature with great subtlety, but with great obscurity; referring every thing that exists to mathematical principles. He taught, that reason, improved by mathematical learning, is alone capable of judging concerning the nature of things; that the whole world consists of infinite and finite; that number subsists by itself, and is the chain which by its power sustains the eternal frame of things; that the Monad is not the sole principle of all things, but that the Binary is necessary to furnish materials, from which all subsequent numbers may be produced; that the world is one whole, which has a fiery centre, about which the ten celestial spheres revolve, heaven, the sun, the planets, the earth, and the moon; and the sun has a vitreous surface, whence the fire diffused through the world is reflected, rendering the mirror from which it is reflected visible; that all things are preserved in harmony by the law of necessity; and that the world is liable to destruction both by fire and by water. From this summary of the doctrine of Philolaus it appears probable, that, following Timæus, whose writings he possessed, he so far departed from the Pythagorean system, as to conceive two independent principles in nature, God and Matter, and that it was from the same source that Plato derived his doctrine upon this subject."

* **PHILOLOGER**. *n. f.* [*φιλόλογος*.] One whose chief study is language; a grammarian; a critic.—*Philologists* and critical discourses will not be angry with our narrower explorations. *Brown*.—You expect that I should discourse of this matter like a naturalist, not a *philologist*. *Boyle*.—The best *philologists* say, that the original word does not only signify domestic, as opposed to foreign, but also private, as opposed to common. *Spratt's Sermons*.

* **PHILOLOGICAL**. *adj.* [from *philology*.] Critical; grammatical.—Studies called *philological*, are history, language, grammar, rhetoric, poetry, and criticism. *Watts*.—He who pretends to the learned professions, if he doth not arise to be a critic himself in *philological* matters, should frequently converse with dictionaries, paraphrasts, &c. *Watts*.

* **PHILOLOGIST**. *n. f.* See **PHILOLOGER**. A critic; a grammarian.

P H I L O L O G Y.

DEFINITIONS and OBJECTS of PHILOLOGY.

PHILOLOGY is thus briefly defined by Dr JOHNSON:

* **PHILOLOGY**. *n. f.* [*φιλόλογια*; *philologie*, Fr.] Criticism; grammatical learning. See **PHILOLOGICAL**.—Temper all discourses of *philology* with interpersions of morality. *Haller*.

PHILOLOGY is compounded of *φιλος*, a lover, and *λογος*, a word, and imports the desire of investigating the properties and relations of words. The sages of Greece were, in the most ancient times, denominated *σοφοι*, that is, *wise men*. Pythagoras renounced this pompous appellation, and assumed the more humble title of *φιλόσοφος*, that is, a lover of *wise men*. The learned Greeks were afterwards called *philosophers*; and in process of time, the word

philologer was adopted, to import, "a man deeply versed in languages, etymology, antiquities, &c." Hence the term **PHILOLOGY**.

Though *philology* originally denoted only the study of words and language, it gradually acquired a more extensive signification. It comprehended the study of grammar, criticism, etymology, the interpretation of ancient authors, antiquities; and, in a word, every thing relating to ancient manners, laws, religion, government, language, &c.

Most of the branches of *philology* have been already treated of, under the various heads of COMPARISON, § III.; CRITICISM; DESCRIPTION, ETYMOLOGY, FIGURE, § VI.; GRAMMAR, under ENGLISH LANGUAGE; LANGUAGE; METAPHOR, § 2; NARRATION, § 3; ORATORY, POETRY, &c. There still remains one part, which has been either

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slightly touched upon, or totally omitted, under the foregoing topics; we mean, the nature and complexion of the different languages, at least of the civilized world. But, to enter upon an investigation of the languages of barbarous nations, or even of those of the half civilized nations of India, Persia, Turkey, &c. would answer no object of inquiry, or utility to the great majority, if not the whole, of our readers. But it may be equally useful and entertaining, even to the most unlearned, to give a general historical view of the origin and progress of language from the earliest period of time. In doing this, we shall chiefly follow the ingenious Dr DOIG of Stirling.

SECT. I. HISTORY OF LANGUAGE.

"WHAT was the antediluvian language (says Dr Doig), or whether it was divided into a variety of dialects as at this day, can only be determined by the rules of analogy; and these will lead us to believe, that whatever might have been the primitive language of mankind, if human nature was then constituted as it is at present, a great variety of dialects must of necessity have sprung up in the space of near 2000 years. If we adopt the Mosaic account of the antediluvian events, we must admit, that the descendants of Cain for some ages lived separate from those of Seth. Their manner of life, their religious ceremonies, their laws, their form of government, were probably different, and these circumstances would of course produce a variety in their language. The posterity of Cain were an inventive race. They found out the arts of metal-jurgy, music, upholstery, and therefore probably weaving; and doubtless many other articles conducive to the ease and accommodation of life were the produce of their ingenuity. A people of this character must have paid no small regard to their words and modes of expression. Wherever music is cultivated, language will naturally be improved and refined. When new inventions are introduced, a new race of words and phrases of necessity spring up, corresponding to the recent stock of ideas to be intimated. Besides, among an inventive race of people, new vocables would be continually fabricated, to supply the deficiencies of the primitive language, which was perhaps scanty in words, and its phraseology unpolished. The Cainites, then, among their other improvements, cannot well be supposed to have neglected the cultivation of language.

"Many conjectures have been hazarded both by ancient and modern authors with respect to the origin of writing; an art nearly connected with that of speaking. According to Pliny, "the Assyrian letters had always existed; some imagined that letters had been invented by the Egyptian Mercury; others ascribed the honour of the invention to the Syrians." Some think, and particularly the learned Dr DAVID DOIG of Stirling is of opinion, that "letters were an antediluvian invention, preserved among the Chaldeans, or Assyrians, who were the immediate descendants of Noah, and inhabited those very regions in the neighbourhood of which the ark rested, and where that patriarch afterwards fixed his residence." But the greater probability appears to be, that letters were not invented for several centuries after the flood, else

some writings either antediluvian, or very early after the flood would have been preserved, and as the books of Moses are beyond controversy the oldest writings extant, the opinion of those who think that he either was the inventor of alphabetical characters, or that they were invented a short time before the period in which he lived, is at least highly probable. See ALPHABETICAL CHARACTERS, § 1-5; and ANTEDILUVIANS, § 9. "The descendants of Seth (says Dr DOIG), according to the oriental tradition, were chiefly addicted to agriculture and tending of cattle. They devoted a great part of their time to the exercises of piety and devotion. From this circumstance they came to be distinguished by the title of the *sons of God*. According to this description, the Sethites were a simple unimproved race of people till they mingled with the race of Cain; after which period they at once adopted the improvements and the vices of that wicked family.

"All the descendants of Seth, however, had not mingled with the Cainites. That family of which Noah was descended had not incorporated with the race of Cain; it was, according to the sacred historian, lineally descended from Seth, and had preserved the worship of the true God, when, it is probable, the greatest part of mankind had apostatized, and become idolaters. Along with the true religion, the progenitors of Noah had preserved that simplicity of manners and equability of character, which had distinguished their remote ancestors. Agriculture and rearing cattle had been their favourite occupations. Accordingly, we find, that the patriarch Noah, immediately "after the deluge," became a husbandman, and "planted a vineyard." The chosen patriarchs, who doubtless imitated their pious ancestors, were shepherds, and employed in rearing and tending cattle. Indeed, there are strong presumptions, that the Chaldeans, Assyrians, Syrians, Canaanites, and Arabians, in the earliest ages, followed the same profession.

"From this deduction, we imagine it is at least probable, that the ancestors of Noah perished in the observance of the same simplicity of manners which had been handed down from Adam to Seth, and from him to Enoch, Methuselah, Lamech, and from this last to Noah. According both to scripture and tradition, innovations were the province of the Cainites, while the descendants of Seth adhered to the primitive patriarchal institutions.

"If these premises are allowed to be probable, we may justly infer, that the language of Noah differed very little from that of Adam (see LANGUAGE, Sect. III.); and that if it is possible to ascertain the language of the former, that of the latter will of course be discovered. Whatever may have been the dialect of Noah and his family, that same dialect, according to the Mosaic account, must have obtained, without any alteration, till the era of the building of the tower of Babel.—Upon this occasion a dreadful convulsion took place; the language of mankind was confounded, and men were scattered abroad upon the face of all the earth.

"How far this catastrophe extended, we cannot determine. One thing is certain, that the languages of all the nations who settled near the centre of population were but slightly affected by its influence. Strabo has observed, that 3000 years after, the inhabitants of those countries exhibited

hibited a very strong resemblance of cognation, "in their language, manner of living and the lineaments of their bodies," and that "the resemblance in all those particulars was most remarkable among the inhabitants of Mesopotamia."

"It appears, then, that the languages of the Armenians, Syrians, Assyrians, Arabians, and probably of the Canaanites, did not suffer materially by the confusion of tongues. This observation may be extended to many of the dialects spoken by the people who settled in those countries not far distant from the region where Moses has fixed the original seat of mankind after the deluge. The inference then is, that if Noah and his family spoke the original language of Adam, as they most probably did, the judgment which affected the confusion of tongues did not produce any considerable alteration in the language of such of the descendants of Noah, as settled near the region where that patriarch had fixed his residence after he quitted the ark.

"But supposing the change of language produced by the catastrophe at the building of the tower, as considerable as has ever been imagined, it does not, after all, appear certain that all mankind, without exception, were engaged in this impious project. If this assertion be well founded, the consequence will be, that there was a chosen race who did not engage in that enterprise. If there was such a family, society, or body of men, it will follow, that this family, society, &c. retained the language of its great ancestor, without change or variation. That such a family did actually exist is highly probable, for the following reasons:

"1. We think there is reason to believe that Ham, upon the heavy curse denounced upon him by his father, retired from his brethren, and fixed his residence elsewhere. Accordingly, we find his descendants scattered far and wide, at a very great distance from the Gordyzen mountains, where the ark is generally supposed to have rested immediately after the flood. Some of them we find in Chaldea, others in Arabia Felix, others in Ethiopia, others in Canaan, and others in Egypt; and, finally, multitudes scattered over all the coast of Africa. Between those countries were planted many colonies of Shemites, in Elam, Assyria, Syria, Arabia, &c. We find, at the same time, the descendants of Shem and Japheth settled in a great degree, contiguous to each other. This dispersion of the Hamites, irregular as it is, can scarce, we think, have been accidental; it must have been owing to some uncommon cause, and none seems more probable than that assigned above. If, then, the descendants of Ham separated early, and took different routs, as from their posterior situations it appears they did, they could not all be present at the building of the tower.

"It is not probable that the descendants of Shem were engaged in this undertaking, since we find that they were not scattered abroad upon the face of all the earth. The children of Shem were Elam, Ashur, Arphaxad, Lud, and Aram. Elam settled near the mouth of the river Tigris, in the country which, by the Gentile writers, was called *Elymais*. Above him, on the same river, lay the demesne of Ashur on the western side. In like

manner, upon the same river, above him was situated Aram, who possessed the country of Aramea; and opposite to him was Arphaxad, or Arbaces or Arbaches, and his country was denominated *Arphabitis*. Lud, as some think, settled in Lydia, among the sons of Japheth; but this opinion seems to be without foundation. Here, then, there is dispersion, but such as must have originated from the nature of the thing. The five brothers all settled contiguous, without being scattered abroad upon the whole earth. Besides, there was no confusion of language among these tribes: they continued to use one and the same tongue, (or *lip* as the Hebrew idiom expresses it), through many succeeding generations.

"From these circumstances, it appears, that the posterity of Shem were not involved in the guilt of the builders of the tower, and of consequence did not undergo their punishment. If, then, the language of the Shemites was not confounded upon the erection of the tower, the presumption is, that they retained the language of Noah, which in all probability was that of Adam. Some dialectical differences would in process of time creep in, but the radical fabric of the language would remain unaltered.

"3. The posterity of Shem appear in general to have cultivated the pastoral life. They imitated the style of living adopted by the antediluvian posterity of *Seib*. No sooner had Noah descended from the ark, than he became *Ish ha Adamah*, a man of the earth; that is, a husbandman, and planted a vineyard. We find that some ages after, Laban the Syrian had flocks and herds; and that the chief wealth of the patriarch Abraham and his children consisted in their flocks and herds. Even his Gentile descendants, the Ishmaelites and Midianites, seem to have followed the same occupation. But people of this profession are seldom given to changes: there wants are few, and of consequence they are under few or no temptations to deviate from the beaten track. This circumstance renders it probable, that the language of Adam and Noah was preserved with little variation among the descendants of Arphaxad down to Abraham.

"We have observed, that Ham probably left the society of his brothers, and emigrated elsewhere. There is a tradition still current in the East, and which was adopted by many of the Christian fathers, that Noah, in the 930th year of his life, by divine appointment, did formally divide the whole terraqueous globe among his three sons, obliging them to take an oath that they would stand by the decision. Upon this happened a migration at the birth of Peleg, three centuries after the flood. It is affirmed, that Nimrod the arch-rebel disregarded this partition, and encroached upon the territory of Ashur, which occasioned the first war after the flood.

"The Greeks had acquired some idea of this partition, which they supposed to have been between Jupiter, Neptune, and Pluto. Plato seems to have heard of it: "For (says he) the gods of old obtained the dominion of the whole earth, according to their different allotments. This was effected without any contention, for they took possession of their several provinces in a fair and

amicable way, by lot. Josephus, in his account of the dispersion of mankind, plainly insinuates a divine destination; and Philo Judæus was of the same opinion.

"In consequence of this arrangement, the sons of Shem took possession of the countries above mentioned; the posterity of Japhet had spread themselves towards the N. and W.; but the Hamites seized upon the land of Canaan: removed eastward, and at length descending from the Garduchean or Cordyzean mountains, directed their course westward, and arrived at the plains of Shinar, which had been possessed by the Aihurim ever since the era of the first migration at the birth of Peleg. The sacred historian informs us, that "the whole earth was of one language and of one speech;" that in journeying from the east, they lighted upon the plain of Shinar, and dwelt there. In this passage we find no particular people specified; but as we find Nimrod, one of the descendants of Ham, settled in that country, we are sure that they were the offspring of that patriarch. It would not, we think, be easy to assign a reason how one branch of the family of Ham came to plant itself in the midst of the sons of Shem by any other means but by violence.

"It is indeed generally supposed that Nimrod, at the head of a body of the children of Ham, made war upon Aihur, and drove him out of the country of Shinar; and there laid the foundation of that kingdom, the beginning of which was Babel; that this chief, supported by all the Cushites, and a great number of apostates from the family of Shem and Japhet who had joined him, refused to submit to the divine ordinance by the mouth of Noah, with respect to the partition of the earth; and that he and his adherents were the people who erected the celebrated tower, in consequence of a resolution which they had formed to keep together, without repairing to the quarters assigned them by the determination of Heaven. This was the crime which brought down the judgment of the Almighty upon them, by which they were scattered abroad upon the face of all the earth. The main body of the children of Shem and Japhet were not engaged in this impious undertaking; their language, therefore, was not confounded, nor were they themselves scattered abroad. Their habitations were contiguous; those of the Shemites towards the centre of Asia; the dwellings of Japhet were extended towards the N. and NW.; and the languages of both these families continued for many ages without the least variation, except what time, climate, laws, religion, new inventions, arts, sciences, and commerce, &c. will produce in every tongue in a succession of years.

"The general opinion then was, that none but the progeny of Ham and their associates were present at the building of the tower, and that they only suffered by the judgment consequent upon that attempt. There are even among the Pagans some allusions to the division of the world among the three sons of Noah.

"Berofus, in his history of the Babylonians, informs us, that Xisuthrus, at the foot of Mount Baris or Luban, where the ark rested, gave his children their last instructions, and then vanished

out of sight. It is now generally believed that the Xisuthrus of Berofus was Noah. (See DELUGE, § 5.) Eupolemus, another Heathen writer, tells us, "that the city Babel was first founded, and afterwards the celebrated tower; both which were built by some of those people who escaped the deluge. They were the same with those who in after times were exhibited under the name of giants. The tower was at length ruined by the hand of the Almighty, and those giants were scattered over the whole earth." This quotation plainly intimates, that according to the opinion of the author, only the rascally mob of the Hamites, and their apostate associates, were engaged in this daring enterprise.

"Indeed it can never be supposed that Shem, if he was alive at that period, as he certainly was, would co-operate in such an absurd and impious undertaking. That devout patriarch, we think, would rather employ his influence and authority to divert his descendants from an attempt which he knew was undertaken in contradiction to an express ordinance of Heaven: and it is surely very little probable that Elam, Aihur, Arphaxad, and Aram, would join the impious confederacy in opposition to the remonstrances of their father. The building of the tower, according to the most probable chronology, was undertaken at a period so late, that all mankind could not possibly have concurred in the enterprise.

"Many of the fathers were of opinion, that Noah settled in Armenia, the country where the ark rested; and that his descendants did not leave that region for five generations, during the space of 659 years. By this period the human race must have been so amazingly multiplied, that the plains of Shinar could not have contained them. (See ANTIJERUSALEM, § 11—14.) According to the Samaritan Pentateuch, and the Septuagint version, Peleg was born in the 134th year of his father Eber. Even admitting the vulgar opinion, that the tower was begun to be built, and the dispersion consequent upon that event to have taken place at this era, the human race would have been by much too numerous to have universally concurred in one design.

"From these circumstances, it appears, that the whole mass of mankind was not engaged in building the tower; that the language of all the human race was not confounded upon that occasion; and that the dispersion reached only to a combination of Hamites, and of the most profligate part of the two other families, who had joined their wicked confederacy.

"We have pursued this argument to considerable length, because some have inferred, from the difference in language existing at this day, that mankind cannot have sprung from two individuals; because, from the connection still existing among languages, some have been bold enough to question the fact, though plainly recorded in sacred history; and lastly, because we imagine that some of our readers, who do not pretend to peruse the writings of the learned, may be gratified by seeing the various opinions respecting the confusion of tongues, and the dispersion of mankind collected into one mass, equally brief, we hope, and intelligible: and this view of these opinions

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with the foundations on which they respectively rest, we think may suffice to prove, that the language of Noah was for some ages preserved unmixed among the descendants of both Shem and Japhet.

"To gratify still farther such of our curious readers as may not have access to more ample information, we shall in this place exhibit a brief detail of the circumstances which attended this fatal attempt. The people engaged in it have been held up as a profligate race. The Almighty himself denominates them "*the children of men*," which is the very appellation by which the antediluvian sinners were characterized; *the sons of God saw the daughters of men*, &c. Their design in raising this edifice was "*to make them a name, and to prevent their being scattered abroad upon the face of the whole earth*." Gen. xi.

"Whatever resolution the rest of mankind might take, they had determined to maintain themselves on that spot. The tower was intended as a centre of union, and perhaps as a fortress of defence. Such a stupendous fabric, they imagined, would immortalize their memory, and transmit the name of their confederacy with eclat to future ages. This design plainly intimates, that there was only a party concerned in the undertaking; since, had all mankind been engaged in it, the purpose would have been foolish and futile. Again, they intended, by making themselves a name, to prevent their being scattered abroad upon the face of the earth. This was an act of rebellion in direct contradiction to the divine appointment, which constituted their crime, and brought down the judgment of Heaven upon their guilty heads. The consequence of the confusion of languages was, that the projectors left off to build, and were actually scattered abroad, contrary to their intention. See BABEL.

"Abydenus, in his Assyrian annals, records, that the "tower was carried up to heaven; but that the gods ruined it by storms and whirlwinds, and overthrew it upon the heads of those who were employed in the work, and that the ruins of it were called *Babylon*. Before this there was but one language subsisting among men: but now there arose *πολυγλωττον*, a manifold speech; and he adds, that a war soon after broke out between Titan and Cronus." The Sybilline oracles give much the same account of this early and important transaction.

"Justin informs us, that the Phœnicians who built Tyre were driven from Assyria by an earthquake. These Phœnicians were the descendants of Mizraim the youngest son of Ham; and were, we think, confederates in building the tower, and were driven away by the catastrophe that ensued. Many other allusions to the dispersion of this branch of the family occur in Pagan authors. Upon the whole, it is probable, that the country of Shinar lay desolate for some time after this revolution; for the dread of the judgment inflicted upon the original inhabitants would deter men from settling in that inauspicious region. At last, however, a new colony arrived, and Babel, or Babylon, became the capital of a flourishing kingdom.

"Nimrod, the mighty hunter, is generally

thought to have been deeply concerned in the transactions of this period. According to most authors, ancient and modern, this patriarch was the leader of the confederates who erected the tower, and the chief instigator to that enterprise. The Seventy have pronounced him a giant, as well as a huntsman. They have translated the Hebrew word *gebur*, which generally signifies *strong, mighty*, by the word *Tyrac, giant*; an idea which we imagine those translators borrowed from the Greeks. The antediluvian giants are called *Nephelim* and *Repbaim*, but never *Geburim*. The Rabbinical writers, who justly hated the Babylonians, readily adopted this idea; and the fathers of the church, and the Byzantine historians, have universally followed them. He has been called *Nimrod, Nebrod, Nymbroth, Nebroth, and Nabris*. Not a few have made him the first *Bacchus*, and compounded his name of *Bar*, a son, and *Cush*, that is, the son of *Cush*. Some have imagined that he was the Orion of the Pagans, whose shade is so nobly described by Homer. But the etymology of this last name implies something honourable, and very unsuitable to the idea of the tyrant *Nimrod*. It must be observed, however, that we find nothing in scripture to warrant the supposition of his having been a tyrant; so far from it, that some have deemed him a benefactor to mankind."

See NIMROD.

"The beginning of this prince's kingdom was Babel. Eusebius gives us first a catalogue of six kings of the Chaldeans, and then another of five kings of Arabian extraction, who reigned in Chaldea after them. This might naturally enough happen, since it appears that the inhabitants of those parts of Arabia which are adjacent to Chaldea were actually Cushites, of the same family with the Babylonians.

"The Cushites, however, were at last subdued, perhaps partly expelled Chaldea, by the *Chafdim*, who probably claimed that territory as the patrimony of their progenitors. That the *Chafdim* were neither *Cushites*, nor *Ilamites*, is obvious from the name. The Hebrews, and indeed all the Orientals, denominated both the people who inhabited the eastern coast of Arabia *Cushim*, and also the Ethiopians who sprung from the last mentioned people. Had the later inhabitants of Chaldea been the descendants of Cush, the Jewish writers would have called them *Cushim*. We find they called the Phœnicians *Chanaanim*, the Syrians *Aramim*, the Egyptians *Mizraim*, the Greeks *Jonim*, &c. The *Chafdim*, therefore, or modern inhabitants of Chaldea, were positively descended of one *Chesed* or *Chafed*; but who this family-chief was, it is not easy to determine. The only person of that name whom we meet with in early times is the 4th son of Nabor the brother of Abraham; (Gen. xxii. 22.) and some have been of opinion that the Chaldeans were the progeny of this *Chesed*. This appears highly probable, because both Abram and Nabor were natives of *Ur*, of the *Chafdim*. The former, we know, in consequence of the divine command, removed to *Haran*, afterwards *Churra*; but the latter remained in *Ur*, where his family multiplied, and, in process of time, became masters of the country which they called the land of the *Chafdim*, from *Chesed* or *Chafed*.

Chafed, the name of their ancestor. This account is the more probable, as we find the other branches of Nahor's family settled in the same neighbourhood. See ELIHU and JOB.

"How the Greeks came to denominate these people *Χαλδαῖοι*, *Chaldei*, is a question rather difficult to be resolved; but we know that they always affected to distinguish people and places by names derived from their own language. They knew a rugged, erratic nation, on the banks of the river Thermodon, in the territory of Pontus, bordering on Armenia the Less. These, in ancient times were called *Alybes*, or *Chalybes*, because they were much employed in forging and polishing iron. Their neighbours, at length gave them the name of *Chald* or *Caled*, which imports, in the Armenian dialect, *ferce*, *hardy*, *robust*. This title the Greeks adopted; and out of it formed the word *Χαλδαῖοι*, *Chaldeans*.

"The Mosaic history informs us, that Ashur went out of *that land*, (Shinar) and built Nineveh and several other considerable cities. One of the successors of Ashur was the celebrated Ninus, who first broke the peace of the world (*Justin*, i. c. 1.), made war upon his neighbours, and obliged them by force of arms to become his subjects, and pay tribute. Some authors make him the immediate successor of Ashur, and the builder of Nineveh. This we think is not probable; Eusebius, as we have observed above, gives a list of six Arabian princes who reigned in Babylon. We therefore imagine, that Ninus was the fifth or sixth in succession after Ashur.

"Ninus, according to Diodorus Siculus, made an alliance with Arizius king of the Arabians, and conquered the Babylonians. This event put an end to the empire of the Hamites or Cushim in Shinar or Babylonia. The author observes, that the Babylon which figured afterwards did not then exist. This fact is confirmed by the prophet Isaiah (xxiii. 13.); "Behold the land of the Chafidim; this people was not till Ashur founded it for them that dwell in the wilderness. They set up the towers thereof, &c." After Babylonia was subdued by the Assyrians under Ninus, the capital was either destroyed by that conqueror, or deserted by the inhabitants. At length it was rebuilt by some one or other of the Assyrian monarchs, who collected the roving Chafidim, and obliged them to settle in the new city. These were subject to the Assyrian empire till the reign of Sardanapalus, when both the Medes and Babylonians rebelled against that effeminate prince.

"The Chafidim were celebrated by all antiquity for their proficiency in astronomy, astrology, magic, and curious sciences. Ur, or Orchoe, was a kind of university for those branches of learning. Such was their reputation in those studies, that over a great part of Asia and Europe, a Chaldean and an astrologer were synonymous terms. These sciences; according to the tradition of the Orientals, had been invented by Seth, whom they call *Edris*; and had been cultivated by his descendants downward to Noah, by whom they were transmitted to Shem, who conveyed them to Arphaxad and his posterity.

"To us it appears probable, that the religious sentiments transmitted from Noah through the

line of Shem, were kept alive in the family of Arphaxad, and so handed down to the families of Serug, Nahor, Terah, Abram, Nahor II. and Haran, &c. The Jewish rabbis, and all the Persian and Mahomedan writers, made Abraham contemporary with Nimrod; who, say they, persecuted him most cruelly for adhering to the true religion. That these two patriarchs were contemporary, is very improbable, since Nimrod was the third generation from Noah, and Abram the tenth. Abram has been invested by the rabbinical writers with every department of learning. According to them, he transported from Charræ into Chanaan and Egypt, astronomy, astrology, mathematics, geography, magic, alphabetical writing, &c. &c.

"After the Babylonish captivity, when the Jews were dispersed over all the east, and began to make *profelytes of the gate* among the Pagans, wonderful things were reported of Abram with respect to his acquirements in human erudition, as well as his supereminence in virtue and piety. These legendary tales were believed by the profelytes, and by them retailed to their connections and acquaintances. But certainly the holy man either was not deeply versed in the human sciences, or did not deem them of importance enough to be communicated to his posterity; since the Jews are, on all hands, acknowledged to have made little progress in these improvements. To think of raising the fame of Abraham, by classing him with the philosophers, betrays an extreme defect in judgment. He is entitled to praise of a higher kind; for he excelled in piety, was the father of the faithful, the root of the Messiah, and the friend of God. Before these, all other titles vanish away. We shall only observe, that the Persians, Chaldeans, and Arabians, pretended that their religion was that of Abraham; that honourable mention is made of him in the Koran; and that the name Abraham or Ibrahim was celebrated over all the east. See ABRAHAM.

"In the progress of this disposition, we have seen that the language of Noah was, in all probability, the same or nearly the same with that of Adam. Additions and improvements might be introduced, but still the radical stamina of the language remained unchanged. It has likewise, we hope, appeared, that the confusion of language at the building of the tower of Babel was only partial, and affected none but the rebellious crew of the race of Ham and the apostate part of the families of Shem and Japhet. We have concluded that the main body of the race of Shem were neither dispersed, nor their language confounded; and that consequently the descendants of that patriarch continued to speak their paternal dialect, or the uncorrupted language of Noah. To these arguments we may add another, that in all probability the worship of the true God was preserved in the line of Arphaxad, after the generality of the other sects had lapsed into idolatry. Out of this family Abraham was taken, in whose line the true religion was to be preserved. Whether Abraham was an idolater when he dwelt in the land of Chaldea, the scripture does not inform us, though it seems to be evident that his father was. One thing, however, is certain, namely, that Je-

hovah

hovah appeared to him, and pronounced a blessing upon him, before he left Ur of the Chaldees. (See Gen. xii. 1. and Acts vii. 4.) The progenitors of his family had been distinguished by adhering to the true religion. About this time, however, they began to degenerate, and to adopt the zablism of their apostate neighbours. It was then that Abraham was commanded by heaven to "leave his kindred and his father's house, and to travel into a land which was to be shown him." The Almighty intended that the true religion should be preserved in his line, and therefore removed him from a country and kindred, by the influence of whose bad example his religious principles might be endangered. His family had only of late apostatized; till that period they had preserved both the language and religion of their venerable ancestors.

"But however much Abraham might differ from the other branches of his family in his religious sentiments, his language was certainly in unison with theirs. The consequence of this unquestionable position is, that the language which he carried with him into Canaan, was exactly the same with that of his family which he relinquished when he began his peregrinations. But if this be true, it will follow, that the language afterwards denominated Hebrew, and that of the Chasdim or Chaldeans, were originally one and the same. This position, we think, will not be controverted. There is then an end of the dispute concerning the original language of mankind. We have advanced some presumptive proofs, that the language of Adam was transmitted to Noah, and that the dialect of the latter was preserved in the line of Arphaxad downwards to the family of Abraham; and it now appears that the Hebrew and Chaldean were originally spoken by the same family, and, of course, were the same between themselves, and were actually the first language upon earth, according to the Mosaic history. Numberless additions, alterations, improvements, we acknowledge, were introduced in the course of 3000 years; but still the original stamina of the language were unchanged. The Orientals are not a people *given to change*; and this character, in the earliest ages, was still more prevalent than at present.

"In confirmation of these presumptive arguments, we may add the popular one which is commonly urged upon this occasion, viz. that the names of antediluvian persons and places, mentioned by the sacred historian, are generally of Hebrew original, and significant in that language. Some of them, we acknowledge, are not so; but in this case it ought to be remembered, that a very small part of that language now exists, and that probably the radicals from which these words are descended, are among the number of those which have long been lost."

SECT. II. Of the HEBREW LANGUAGE.

"HAYING thus proved (says Dr DOUG.) the priority of the Hebrew to every other language that has been spoken by men, we shall now proceed to consider its nature and genius; from which it will appear still more evidently to be an

original language, neither improved nor debased by foreign idioms. The words of which it is composed are short, and admit of very little flexion. The names of places are descriptive of their nature, situation, accidental circumstances, &c. We find in it no improvement from the age of Moses to the era of the Babylonish captivity. The age of David and Solomon was the golden period of the Hebrew tongue; and yet, in our opinion, it would puzzle a critic of the nicest acumen to discover much improvement even during that happy era. In fact, the Jews were by no means an inventive people. We hear nothing of their progress in literary pursuits; nor do they seem to have been industrious in borrowing from their neighbours. The laws and statutes communicated by Moses were the principal objects of their studies. These they were commanded to contemplate day and night; and in them they were to place their chief delight. The consequence of this command was, that little or no regard could be paid to taste, or any subject of philosophical investigation. Every unimproved language abounds in figurative expressions borrowed from sensible objects. This is in a peculiar manner the characteristic of the language in question; of which it would be superfluous to produce instances, as the fact must be obvious even to the attentive reader of the English Bible.

"In the course of this argument, we think it ought to be observed, and we deem it of the greatest importance, that if we compare the other languages which have claimed the prize of originality from the Hebrew with that dialect, we shall quickly be convinced that the latter has a just title to the preference. The writers, who have treated this subject, generally bring into competition the Hebrew, Chaldean, Syrian, and Arabian. Some one or other of these has commonly been thought the original language of mankind. The arguments for the Syrian and Arabian are altogether futile. The numerous improvements superinduced upon these languages, evidently prove that they could not have been the original language. In all cognate dialects, etymologists hold it as a maxim, that the least improved is likely to be the most ancient.

"We have observed above, that the language of Abraham and that of the Chasdim or Chaldeans were originally the same; and we are persuaded, that if an able critic should take the pains to examine strictly these two languages, and to take from each what may reasonably be supposed to have been improvements or additions since the age of Abraham, he will find intrinsic evidence of the truth of this position. There appear still in the Chaldean tongue great numbers of words the same with the Hebrew, perhaps as many as mankind had occasion for in the most early ages; and much greater numbers would probably be found, if both languages had come down to us entire. The construction of the two languages is indeed somewhat different; but this difference arises chiefly from the superior improvement of the Chaldean. While the Hebrew language was in a manner stationary, the Chaldean underwent progressive improvements; was mellowed by antitheses,

ses, rendered sonorous by the disposition of vocal sounds, acquired a copiousness by compounds, and a majesty by affixes and prefixes, &c. In process of time, however; the difference became so great, that the Israelites did not understand the Chaldean language at the era of the Babylonish captivity. This much the prophet intimates, when he promises the pious Jews protection "from a fierce people; a people of a deeper speech than they could perceive; of a stammering tongue that they could not understand." Isaiah xxxiii. 19.

"The priority of the Chaldean tongue is indeed contended for by very learned writers. Camden calls it the mother of all languages; and most of the fathers were of the same opinion. Amira has made a collection of arguments, not inconsiderable, in favour of it; and Myriceus, after him, did the same. Erpenius, in his oration for the Hebrew tongue, thought the argument for it and the Chaldean to equal, that he did not choose to take upon him to determine the question.

"Many circumstances, however, concur to make us assign the priority to the Hebrew, or rather to make us believe that it has suffered fewest of those changes to which every living tongue is more or less liable. If we strip this language of every thing obviously adventitious, we shall find it extremely simple and primitive. 1. Every thing metaphorical, supposing the vowels and points essential, was certainly unknown in its original character. 2. All the prefixed and affixed letters were added time after time, to give more compass and precision to the language. 3. The various voices, moods, tenses, numbers, and persons of verbs, were posterior improvements; for in that tongue nothing at first appeared but the indeclinable radix. 4. In the same manner, the few adjectives that occur in the language, and the numbers and regimen of nouns, were not from the beginning. 5. Most of the Hebrew nouns are derived from verbs; indeed many of them are written with the very same letters. This rule, however, is not general; for often verbs are derived from the nouns, and even some from prepositions. 6. All the verbs of that language, at least all that originally belonged to it, uniformly consist of three letters; and seem to have been at first pronounced as monosyllables. If we anatomize the Hebrew language in this manner, we shall reduce it to a very great simplicity; we shall confine it to a few names of things, persons, and actions; we shall make all its words monosyllables, and give it the true characters of an original language. If at the same time we reflect on the small number of radical words in that dialect, we shall be more and more convinced of its originality.

"It will not be expected, that we should enter into a minute discussion of the grammatical peculiarities of this ancient language. For these we must refer our readers to the numerous and elaborate grammars of that tongue, which are everywhere easily to be found. We shall only make a few strictures, which naturally present themselves, before we dismiss the subject.

"The generality of writers who have maintained the superior antiquity of the Hebrew language, have at the same time contended that all other

languages of Asia, and most of those of Europe, have been derived from that tongue as their source and matrix. We, for our part, are of opinion, that perhaps all the languages in the eastern part of the globe are coeval with it, and were originally one and the same; and that the differences which afterwards distinguished them, sprung from climate, caprice, inventions, religions, commerce, conquests, and other accidental causes, which will occur to our intelligent readers. We have endeavoured to prove, that all mankind were not concerned in the building of the fatal tower, nor affected by the punishment consequent upon that attempt; and we now add, that even that punishment was only temporary; since we find, that those very Hamites or Cushim, who are allowed to have been affected by it, did certainly afterwards recover the former organization of their *lip*, and differed not more from the original standard than the descendants of Japhet and Shem.

"The Jewish rabbies have pretended to ascertain the number of languages generated by the vengeance of heaven at the building of Babel. They tell us, that mankind was divided into 70 nations and 70 languages, and that each of these nations had its tutelary or guardian angel. This fabulous legend is founded on the number of the progeny of Jacob at the time when that patriarch and his family went down into Egypt.

"Abraham, a Hebrew, lived among the Chaldeans, travelled among the Canaanites, sojourned among the Philistines, lived some time in Egypt; and in all appearance conversed with all those nations without any apparent difficulty. This circumstance plainly proves, that all these nations at that time spoke nearly the same language. The nations had not yet begun to improve their respective dialects, nor to deviate in any measure from the monosyllabic tongue of the Hebrews. With respect to the language of Canaan, afterwards the Phœnician, its similarity to the Hebrew is obvious from the name of gods, men, cities, mountains, rivers, &c. which are the very same in both tongues, as might be shown in numberless cases.

We shall now give a brief account of the Hebrew letters, and of the *Masoretic points*, about which there have been so much controversy among Hebrews. Much has been written, and numberless hypotheses proposed, to investigate the origin of *alphabetical writing*. To give even an abridged account of all these, would fill many volumes. (See ALPHABETICAL CHARACTERS.) In the original scheme of HIEROGLYPHICS, the process was doubtless somewhat in this manner: A lion might be sketched, to import fierceness or valour; an *ox*, to denote strength; a *flag*, to signify swiftness; a *hare*, to intimate timorouriness, &c. The next step in this process would naturally extend to the inventing and appropriating of a few arbitrary characters, for representing abstract ideas, and other relations, which could not be well ascertained by the methods above mentioned. These arbitrary signs might readily acquire a currency by compact, as money and medals do over a great part of the world. Upon this plan we imagine the ancient Chinese formed their language.

"But

"But neither the picture nor the hieroglyphic, nor the method of denoting *ideas* by arbitrary characters appropriated by compact, could ever have arrived at such perfection as to answer all the purposes of ideal communication. The grand desideratum then would be to fabricate characters to represent simple sounds, and to reduce these characters to so small a number as to be easily learned and preserved in the memory. In this attempt the Chinese have notoriously failed; their letters, or rather their characters, are so numerous, that few, if any, of their most learned and industrious authors, have been able to learn and retain the whole catalogue. Indeed those people are not able to conceive how any combination of 20 or 30 characters should be competent to answer all the purposes of written language.

"Many different nations have claimed the honour of this invention. The Greeks ascribed it to the Phœnicians. They borrowed their letters from the Phœnicians, and of course looked up to them as the inventors. Others attributed the invention to the Egyptians." But this is contrary to fact, for the Egyptians used hieroglyphics for many ages after the Phœnicians, Hebrews, and Greeks had completed their alphabets. And if they had ever invented or used alphabetical characters, they would immediately have given up the use of hieroglyphics.

From various circumstances Dr Doig makes it evident "that the Syrian alphabet, or the Syrian letters, were the same with the Hebrew. That the Assyrian or Chaldaic and Hebrew languages were the same, (he adds,) has been fully proved already: that their letters were the same in the original structure, can scarce be controverted. These letters, we think, were antediluvian. As this opinion may admit some dispute, we shall take the liberty to subjoin our reasons.

"1. It appears that the era of this invention is buried in impenetrable obscurity. Had an invention of such capital importance to mankind been made in the postdiluvian ages, the author would have been commemorated in the historical annals of the country where he lived.

"2. The art of writing in alphabetical characters, according to the sacred records, was practised at so early a period, that there was not a long enough interval between that and the deluge to give birth to that noble invention.

"Moses has recorded the history of the creation, of a few of the capital transactions of the antediluvian world, the birth, the age, the death, of the lineal descendants of Seth. He has preserved the dimensions of the ark, the duration of the universal deluge, its effects upon man and all terrestrial animals, the population of the world by the posterity of Noah, the age, &c. of the patriarchs of the line of Shem, from which his own ancestors had sprung. To this he has subjoined the petty occurrences which diversified the lives of Abraham, Isaac, and Jacob, and their descendants. Whence did the historian derive his information? We believe few of our readers will be so enthusiastic as to imagine that the author received it from divine inspiration. Tradition is a fallible guide; and in many cases the accounts are so minutely precise, as to defy the power of that species of conveyance.

The inspired author must certainly have extracted his abridgment from written memoirs, or histories of the transactions of his ancestors regularly transmitted from the most early periods. These annals he probably abridged, as Ezra did afterwards the history of the Kings of Israel. If this was the case, the art of writing in alphabetical letters must have been known and practised many ages before Moses. It has indeed been pretended, that the Jewish decalogue inscribed upon two tables of stone, was the very first specimen of alphabetical writing. The arguments adduced in proof of this fact are lame and inconclusive. Had that been the case, some notice must have been taken of so palpable a circumstance. Moses wrote out his history, his laws, and his memoirs; and it appears plainly from the text, that all the learned among his countrymen could read them. Writing was then no novel invention in the age of the Jewish legislator, but current and generally known at that era.

"The patriarch Job lived at an earlier period." (See Job.) "In that book we find many allusions to the art of writing, and some passages which plainly prove its existence. This shows that alphabetical characters were not confined to the chosen seed, since Job was in all probability a descendant of Huz, the eldest son of Nahor the brother of Abraham. From this circumstance, we think we may fairly conclude, that this art was known and practised in the family of Terah, the father of Abraham.

"3. There was certainly a tradition among the Jews in the age of Josephus, that writing was an antediluvian invention. That historian pretends, that the descendants of Seth erected two pillars, the one of stone and the other of brick, and inscribed upon them their astropolical observations and other improvements.—This legend shows that there did exist such an opinion of the antiquity of the art of writing.

"4. There must have been a tradition to the same purpose among the Chaldeans, since the writers who have copied from Berosus, the celebrated Chaldean historian, speak of alphabetical writing as an art well known among the antediluvians. According to them, OANNES the Chaldean legislator, gave his disciples "an insight into letters and science. This person also wrote concerning the generation of mankind, of their different pursuits, of civil polity, &c. Immediately before the deluge (say they) the god Cronus appeared to Sifuthrus or Xisuthrus, and commanded him to commit to writing, the beginning, improvement, and conclusion of all things down to the present time, and to bury these accounts securely in the temple of the Sun at Seppara." All these traditions may be fabulous in the main; but still they evince that such an opinion was current, and that though the use of letters was not indeed eternal, it was, however, prior to all the records of history; and of course, we think, an antediluvian discovery.

"This original alphabet, whatever it was, and however constructed, was, we think, preserved in the family of Noah, and from it conveyed down to succeeding generations. If we can then discover the original Hebrew alphabet, we shall be able to investigate the primary species of letters expressive

of those articulate sounds, by which man is in a great measure distinguished from the brute creation. Whatever might be the nature of that alphabet, we may be convinced that the ancient Jews deemed it sacred, and therefore preserved it pure and unmixed till the Babylonish captivity. If, then, any monuments are still extant inscribed with letters prior to that event, we may rest assured that these are the remains of the original alphabet.

"There have, from time to time been dug up at Jerusalem, and other parts of Judea, coins and medals, and medallions, inscribed with letters of a form very different from those square letters in which the Hebrew Scriptures are now written.

"When the Samaritan Pentateuch was discovered, it evidently appeared, that the inscriptions of those medals and coins were drawn in genuine Samaritan characters. The learned Abbé Barthélemy, in his dissertation "on the two medals of Antigonus king of Judea, one of the later Asmonean princes, proves, that all the inscriptions on the coins and medals of Jonathan and Simon Macabæus, and also on his, were invariably in the Samaritan character, down to the 40th year before the Christian era."

"It were easy to prove, from the Mishna and Jerusalem Talmud, that the Scriptures publicly read in the synagogues to the end of the second century were written in the Samaritan character, we mean in the same character with the Pentateuch in question. As the ancient Hebrew, however, ceased to be the vulgar language of the Jews, after their return from the Babylonish captivity the copies of the Bible, especially those in private hands, were accompanied by a Chaldaic paraphrase; and at length the original Hebrew character fell into disuse, and the Chaldaic was universally adopted.

"It now appears that the letters inscribed on the ancient coins and medals of the Jews were written in the Samaritan form, and that the Scriptures were written in the very same characters: we shall therefore leave it to our readers to judge whether (considering the implacable hatred which subsisted between these two nations) it be likely that the one copied from the other; or at least that the Jews preferred, to the beautiful letters used by their ancestors, the rude and inelegant characters of their most detested rivals. If, then, the inscriptions on the coins and medals were actually in the characters of the Samaritan Pentateuch (and it is absurd to suppose that the Jews borrowed them from the Samaritans), the consequence plainly is, that the letters of the inscriptions were those of the original Hebrew alphabet, coeval with that language, which we dare to maintain was the first upon earth.

"It may, perhaps, be thought rather superfluous to mention, that the Samaritan colonists, whom the kings of Assyria planted in the cities of Samaria, were natives of countries where Chaldaic letters were current, and who were probably ignorant of the Hebrew language and characters. When those colonists embraced the Jewish religion, they procured a copy of the Hebrew Pentateuch written in its native character, which, from superstition, they preserved inviolate as they received

it; and from it were copied successively the others which were current in Syria and Palestine when Abp. Usher procured his. From the reasons above exhibited, we hope it will appear, that if the Hebrew alphabet, as it appears in the Samaritan Pentateuch, was not the primitive one, it was at least that in which the Holy Scriptures were first committed to writing.

"Scaliger has inferred, from a passage in Eusebius, and another in St. Jerom, that Ezra, when he reformed the Jewish church, transcribed the Scriptures from the ancient characters of the Hebrews into the square letters of the Chaldeans. This, he thinks, was done for the use of those Jews, who being born during the captivity, knew no other alphabet than that of the people among whom they were educated.—This account of the matter, though probable in itself, and supported by passages from both Talmuds, has been attacked by Buxtorf with great learning and no less acrimony. Scaliger, however, has been followed by a crowd of learned men whose opinion is now pretty generally espoused by the sacred critics."

Having said so much concerning the Hebrew alphabet, we must now, according to promise, (See HEBREW, § III, 1.) hazard a few strictures on the vowels and Masoretic points; the *first* essential, and the *last* an appendage, of that ancient language. The number of the one, and the nature, antiquity, and necessity of the other, in order to read the language with propriety and with discrimination, have been the subject of much and often illiberal controversy among philological writers. To enter into a minute detail of the arguments on either side, would require a complete volume: we shall, therefore, briefly exhibit the state of the controversy, and then adduce a few observations, which, in our opinion, ought to determine the question.

"The controversy then is, Whether the Hebrews used any vowels; or whether the points, which are now called by that name, were substituted instead of them? or if they were, whether they be as old as Moses, or were invented by Ezra, or by the Majorites? This controversy has exercised the wits of the most learned critics of the three last centuries, and is still undetermined. The Jews maintain, that these vowel points were delivered to Moses along with the tables of the law; and consequently hold them as sacred as they do the letters themselves. Many Christian authors who have handled this subject, though they do not affirm their divine original, nor their extravagant antiquity, pretend, however, that they are the only proper vowels in the language, and regulate and ascertain its true pronunciation. Though they differ from the Jews with respect to the origin of these points, they yet allow them a pretty high antiquity, ascribing them to Ezra and the members of the great synagogue.

"At length, however, about the middle of the 16th century, Elias Levita, a learned German Jew, who then flourished at Rome, discovered the delusion, and made it appear that these appendages had never been in use till after the writing of the talmuds, about 500 years after Christ. This innovation raised Elias a multitude of adversaries, both of his own countrymen and Christians. Among the latter appeared the two Buxtorfs, the father and

and the son, who produced some cabballistical books of great antiquity, at least in the opinion of the Jews, in which there was express mention of the points. The Buxtorfs were answered by Capellus and other critics; till Father Morinus having examined all that had been urged on both sides, produced his learned dissertation on that subject; against which there has been nothing replied of any consequence, whilst his work has been universally admired, and his opinion confirmed by those that have beaten the same field after him.

"According to this learned father, it plainly appears that neither Origen, nor St Jerome, nor even the compilers of the Talmuds, knew any thing of what has been called the *vowel points*; and that these books were not finished till the 7th century. Even the Jewish rabbis who wrote during the 8th and 9th centuries, were not in the least acquainted with these points. He adds, that the first vestiges he could trace of them were in the writings of *rabbi Ben Aber*, chief of the western, and of *rabbi Ben Naphtali* chief of the eastern school, that is, about the middle of the 10th century; so that they can hardly be said to be older than the beginning of that period. The Buxtorfs and other learned men have ascribed the invention of the vowel points in question to the rabbis of the school of Tiberias; which flourished about the middle of the 12th century. This opinion is by no means probable, because it appears plain from history, that before that period all the Jewish seminaries in that province were destroyed, and their heads forced into exile. Some of these retired into Babylonia, and settled at Sora, Naherida, and Pumbeditha, where they established famous universities. After this era there remained no more any rabbinical schools in Judæa, headed by professors capable of undertaking this difficult operation, nor indeed of sufficient authority to recommend it to general practice, had they been ever so thoroughly qualified for executing it.

"Capellus and father Morin, who contend for the late introduction of the vowel points, acknowledge that there can certainly be no language without vocal sounds, which are indeed the soul and essence of speech; but they affirm that the Hebrew alphabet actually contains vowel characters, as well as the Greek and Latin and the alphabets of modern Europe. These are *al-phi, he, vau, jod*. These they call the *matres lectionis*, or, if you please, the parents of reading. To these some, we think very properly, add *ain, ain, or ajin*. These, they conclude, perform exactly the same office in Hebrew that their descendants do in Greek. It is indeed agreed upon all hands, that the Greek alphabet is derived from the Phœnician, which is known to be the same with the Samaritan or Hebrew. Hitherto the analogy is not only plausible, but the resemblance precise. The Hebrews and Samaritans employed these vowels exactly in the same manner with the Greeks; and so all was easy and natural.

"But the asserters of the Masoretic system maintain, that the letters mentioned above are not vowels but consonants or aspirations, or any thing you please but vocal letters. This they endeavour to prove from their use among the Arabians, Persi-

ans, and other oriental nations: But to us it appears abundantly strange to suppose that the Greeks pronounced *beta, gamma, delta*, &c. exactly as the Hebrews and the Phœnicians did, and yet at the same time did not adopt their mode of pronunciation with respect to the five letters under consideration. To this argument we think every objection must undoubtedly yield. The Greeks borrowed their letter from the Phœnicians; these letters were the Hebrew or Samaritan; the Greeks wrote and pronounced all the other letters of their alphabet, except the five in question, in the same manner with their originals of the east; if they did so, it obviously follows that the Greek and oriental office of these letters was the same."

"We cannot (adds Dr Doig,) take leave of the sacred language without giving a brief detail of those excellencies which give it a claim to the superiority over those tongues which have sometimes contended with it for the prize of antiquity.

"If this language may claim any advantage over its antagonists, it is undoubtedly in consequence of its simplicity, its purity, its energy, the fecundity of its expressions and significations. In all these, notwithstanding its paucity of words, it excels the vast variety of other languages which are its cognate dialects. To these we may add the significancy of the names, both of men and brutes; the nature and properties of the latter of which are more clearly and fully exhibited by their names in this than in any other tongue hitherto known. Besides, its well authenticated antiquity, and the venerable tone of its writings, surpass any thing left upon record in any other dialect now extant.

"As far as we understand it in its present mutilated condition, and are able to judge of its character from those few books that have come down to our time, we plainly perceive that its genius is simple, primitive, and natural, and exactly conformable to the character of those uncultivated patriarchs who used it themselves, and transmitted it to their descendants in its native purity and simplicity. Its words are comparatively few, yet concise and expressive; derived from a very small number of radicals, without the artificial composition of modern languages. No tongue, ancient or modern, can rival it in the rich fecundity of its verbs, resulting from the variety and significancy of its conjugations; which are so admirably arranged and diversified, that by changing a letter or two of the primitive, they express the various modes of acting, suffering, motion, rest, &c. in such a precise and significant manner, that frequently in one word they convey an idea which, in any other language, would require a tedious paraphrase. These positions might easily be illustrated by numerous examples; but to the Hebrew scholar these would be superfluous, and to the illiterate class neither interesting nor entertaining.

"To these we may add the monosyllabic tone of the language, which, by a few prefixes and affixes without affecting the radix, varies the signification almost at pleasure, while the method of affixing the person to the verb exhibits the gender of the object introduced. In the nouns of this language there is no flexion, except what is necessary to point out the difference of gender and

number. Its cases are distinguished by articles, which are only single letters at the beginning of the word: the pronouns are only single letters affixed; and the prepositions are of the same character prefixed to words. Its words follow one another in an easy and natural arrangement, without intricacy or transposition, without suspending the attention, or involving the sense by intricate and artificial periods. All these striking and peculiar excellencies combined, plainly demonstrate the beauty, the stability, and antiquity of the language under consideration.

"We would not, however, insinuate that this tongue continued altogether without changes. We admit that many radical words of it were lost in a course of ages, and that foreign ones were substituted in their place. The long sojourning of the Israelites in Egypt must have introduced a multitude of Egyptian vocables and phrases into the vulgar dialect at least, which must have gradually incorporated with the written language, and in process of time have become parts of its essence. Besides, the Scripture informs us, that there came up out of Egypt a mixed multitude; who must have infected the Hebrew tongue with the dialect of Egypt. As none of the genuine Hebrew radicals exceed three letters, whatever words exceed that number in their radical state, may be justly deemed of foreign extraction."

SECT. III. Of the ARABIC LANGUAGE.

"We now proceed (says Dr Doig,) to give some account of the Arabian language, which is evidently one of the sister dialects of the Hebrew. Both were originally the same; the former highly improved and enlarged; the latter, in appearance, retaining its original simplicity and rude aspect, spoken by a people of a genius by no means inventive. In this inquiry too, as in the former, we shall spare ourselves the trouble of defending to the grammatical minutæ of the tongue. To those who are inclined to acquire the first elements of that various, copious, and highly improved tongue, we beg to recommend *Erepii Rudimenta Ling. Arab. Golii Gram. Arab.* the dissertations of Aariri, translated by the elder Schultens; Mr Richardson's *Persic and Arabic Gram.*" &c.

That "the Hebrew and Arabian are sister dialects, has been seldom controverted: but we think there is authentic historical evidence that they were positively one and the same, and at a period when the one as well as the other appeared in its infant unadorned simplicity." Our learned author endeavours to prove this, from various circumstances; particularly from Gen. x. 25—30, where it is recorded, that the 13 sons of Jektan or Yoktan and their "descendants possessed all the maritime coast of Arabia from Mesha (*Mocha*) to mount Sephar towards the east of that peninsula." He illustrates this farther from *Havilah*, the name of Jektan's 12th son, being the name of an extensive country abounding with gold, mentioned by Moses, (Gen. ii. 21.) as surrounded by one of the rivers of Paradise; and he might have urged a similar argument from *Ophir*, the name of Yoktan's 11th son, being the name of another country in Arabia, also abounding with gold. This Yoktan, he says, the Arabians also call *Kobtan*; and on the

whole infers, that as these patriarchs spoke nothing but Hebrew, "the original language of all the tribes of the Arabians, who inhabit a vast tract of country along the southern shore, was that of their father Kobtan, that is, the Hebrew. Indeed, the most learned Arabians of modern times unanimously acknowledge this patriarch as the founder of their language as well as of their nation.

"The other districts of Arabia were peopled by the offspring of Abraham. The Ishmaelites, the posterity of that patriarch by Hagar, penetrated into the very centre of the peninsula; incorporated, and in process of time became one people with the Kobtanites. Another region was possessed by the children of the same holy man by Cheturah his second wife. The Moabites, Ammonites, Edomites, Amalekites, &c. who settled in the various regions of Arabia Petraea, were all branches of Abraham's family, and used the same language with their great progenitor. The Scripture indeed speaks of people who inhabited the country last mentioned prior to the branches of Abraham's family; but these were extirpated by the former. The conclusion then is, that all the inhabitants of the three divisions of Arabia did, in the earliest periods, universally use the Hebrew tongue.

"There was, we are sensible, a region of Arabia inhabited by the Cushim, or descendants of Cush. This district was situated on the confines of Babylonia. Our translators have confounded this country with the modern Ethiopia; and have consequently ascribed the exploits of the Arabian Cushim to the Ethiopians. The Arabian kings of Babylonia were those of Cushim. These were conquered and expelled Babylonia by the Chasdim. These spoke the Chaldean dialect.

"The Arabic tongue, originally pure Hebrew, was in process of time greatly altered. The Arabians were divided into many different tribes; a circumstance which naturally produced many different dialects. These, however, were not of foreign growth. No foreign enemy ever conquered those independent hordes. The Persians, Greeks, and Romans, sometimes attempted to invade their territories; but the roughness of the ground, the scarcity of forage, the penury of water, and their natural bravery always protected them. They were indeed once invaded by the Abyssinians or Ethiopians with some show of success; but these invaders were in a short time expelled the country. Their language, of consequence, was never adulterated with foreign words or exotic phrases and idioms. Whatever augmentations or improvements it received were derived from the genius and industry of the natives, and not from adventitious or imported acquisitions. From this we may justly infer, that the Arabian tongue was long stationary, and differed in no considerable degree from its Hebrew archetype. The learned Schultens, in his Commentary on Job, hath shown, to the conviction of every candid inquirer, that it is impossible to understand that sublime composition without having recourse to the Arabic idioms. That patriarch was a Chuzite. His country was a part of Arabia. His three friends were actually Arabians, being the descendants of Ishmael and Esau." (See JOB, ELIPHAZ, ELIHU, &c.) "His country bordered upon that of

of the predatory Chaldeans, who were an Arabian banditti. When we consider all these circumstances, we are strongly inclined to believe that the book of Job was written in Arabic, as the language stood at that period; which could not have been later than the age of Moses. The learned are generally agreed that this whole book, the 3 first chapters excepted, is a poetical composition, replete with the most brilliant and most magnificent imagery, the boldest, the justest, and most gorgeous tropes and allusions, and a grandeur of sentiment wholly divine. Whoever reads the poetical compositions of the modern Arabians on divine subjects, will discover a striking similarity both of diction and sentiment.

"Of those different dialects which prevailed among the various tribes of Arabia, the principal were the Hemyaret and the Koreish. As for the independent tribes, they had no temptation to cultivate any other language than their own.

"The Koreish tribe was the noblest and the most learned of all the western Arabs; and the kaaba, or square temple of Mecca, was, before the era of Mohammed, solely under their protection. This temple drew annually a great concourse of pilgrims from every Arabian tribe, and indeed from every other country where the Sabian religion prevailed. The language of the Koreish was studied with emulation by the neighbouring tribes. Numbers of the pilgrims were people of the first rank. Great fairs were held during their residence at Mecca, and a variety of amusements filled up the intervals of their religious duties. In these entertainments literary compositions bore the most distinguished rank; every man of genius considering not his own reputation alone, but that of his nation or tribe, as interested in his success. Poetry and rhetoric were chiefly esteemed and admired. An assembly at *Ocadb*, had been established about the end of the 6th century, where all were admitted to a rivalry of genius. The merits of their respective productions were impartially determined by the assembly; and the most approved of their poems, written on silk, in characters of gold, were with much solemnity suspended in the temple as the highest mark of honour which could be conferred on literary merit. These poems were called the *Moallabat*, *suspended*, or *Modhabebat*, *golden*. Several of these are preserved in many European libraries.

"From this attention to promote emulation, and refine their language, the dialect of the Koreish became the purest, the richest, and the most polite of all the Arabian idioms. It was studied with a kind of predilection; and about the beginning of the 7th century it was the general language of Arabia, the other dialects being either incorporated with it, or sliding gradually into disuse. By this singular idiomatic union, the Arabic has acquired a prodigious fecundity; whilst the luxuriance of synonyms, and the equivocal or opposite senses of the same or similar words, hath furnished their writers with a wonderful power of indulging, in the fullest range, their favourite passion for antithesis and quaint allusion. One instance of this we have in the word *wali*; which signifies a *prince*, a *friend*, and also a *slave*. This same word, with the change of one letter only, becomes *vali*;

which, without equivocation, imports a *sovereign*. Examples of this kind occur in almost every page of every Arabic dictionary. But all those advantages of this incomparable language are merely modern, and do not reach higher than the beginning of the 6th century.

"The KORAN was written in the dialect of Koreish; a circumstance which communicated additional splendour to that branch of the Arabian tongue. It has been proved, that the language of the original inhabitants of Arabia was genuine Hebrew; but a question arises, whether the Arabians actually preserved their original tongue pure and unadorned during a space of 3000 years, which elapsed between the deluge and the birth of Mohammed? or whether, during that period, it underwent any changes and deviations from the original standard?—The admirers of that language strenuously maintain the former position; others, who are more moderate in their attachment, are disposed to admit the latter. Chardin observes of the oriental languages in general, that they do not vary and fluctuate with time like the European tongues.

"Prof. John Robertson, and the great Schultens, are clearly of opinion, that the language in question, though divided into a great number of streams and canals, still flowed pure and limpid in its course. But every oriental scholar must confess, that the style of the Koran is in a manner obsolete, and become almost a dead language. If the Arabian has deviated so very considerably from the standard of the Koran in little more than 1000 years, by a parity of reason we may infer, that much greater deviations must have affected the language in the space of 3000 years.

It is universally allowed by such as maintain the unfulfilled purity of the Arabian tongue, that it was originally the same with the Hebrew, or with the ancient Syriac and Chaldaic. Let any one now compare the words, idioms, and phraseology of the Koran with the remains of those three languages and the difference will be palpable. This circumstance, one would think, indicates in the strongest terms, a remarkable alteration.

"There are strong reasons to believe that Job was an Arabian, and flourished prior to Moses, perhaps as early as Jacob. (See Job, § 1.) The style, the genius, the figurative tone of the composition; the amazing sublimity of the sentiments, the allusions, the pathos, the boldness, the variety, the irregularity, and the poetical enthusiasm which pervade the whole poem, strongly breathe the Arabian spirit; indeed the very diction is peculiar to that single book, and differs widely from that of the Psalms and every poetical part of the sacred canon. If we compare this book with Mohammed's Koran, we shall scarce find any resemblance of words or phraseology; but a wonderful similarity of figures, enthusiasm, and elevation of sentiments. "We then conclude, that the Arabic did actually lose and gain a multitude of vocables between the era of its first establishment among the descendants of Joktan and Ishmael and the birth of the impostor.

"The art of writing was introduced among the Arabs at a very late period: Without the assistance of this art, one would think it altogether impossible

impossible to prefer any language in its primæval purity and simplicity. It is generally agreed, that the art was known among the Hamyarites at a very early period. These people were sovereigns of Arabia during a course of many ages. Their character was somewhat perplexed and confused. Monuments bearing inscriptions in these characters are still to be seen in some places of Arabia. Some were engraved on rocks; and to these we think it probable that Job alludes, in those passages where he intimates an inclination to have his sufferings recorded in a book, and graven in the rock for ever. We conclude then, that the Hamyarites knew the art of writing from earliest antiquity, and that the letters they employed were the rude Chaldaic in their unimproved state.

"With respect to the highly polished Koreishites, it is agreed on all hands, that they were unacquainted with the use of letters till a few years before the birth of Mohammed. Ebn Chalican, one of their most celebrated historians, informs us, that MORAMER the son of Morra, a native of Anbaris, in Irak, first invented alphabetical characters, and taught his countrymen to use them, from whom this noble invention was derived to the Koreishites. These letters, though neither beautiful nor convenient, were long used by the Arabs. They were denominated *Cupbite*, from *Cupba*, a city of Irak. In this character the original copy of the Koran was written. These we think were the original clumsy characters, which were retained by the vulgar, after the beautiful square Chaldaic letters were invented; and probably used by priests, philosophers, and the learned in general. These letters are often at this day used by the Arabs for the titles of books and public inscriptions.

"ABAULI, the son of Mocla, about 300 years after the death of Mohammed, found out a more elegant and more expeditious character. This invention of Abauli was afterwards carried to perfection by Ebn Bowla, who died in the year of the Hegira 413, when Kader was caliph of Bagdad. This character, with little variation, obtains at this day.

"The vicer above-mentioned, who carried the Arabian alphabet to the pinnacle of perfection, invented and annexed the vowel points for the sake of ease and expedition in writing; from which we may infer, that prior to the 10th century the Arabians had no vowel points. His design, in fabricating these points, was confessedly ease and expedition in writing; which furnishes a presumption that the Hebrew vowel points were devised at some late period for the very same purposes."

Our room permits us not to follow our author in his learned dissertation on the richness and variety of the Arabic language; on the oratory and poetry of the Arabian authors; or to copy his long and learned quotations in praise of that people and language, from Bishop *Pococke's Latin Oration* on that subject. "To these (says Dr Doig), we might add quotations from Erpenius's oration on the same subject, from Golius, Schultens, Hottinger, Bochart, and Sir William Jones; besides a whole cloud of oriental witnesses, whose extravagant encomiums would rather astonish than edify our readers. These panegyrics may perhaps be in

some measure hyperbolic; but in general we believe them pretty well founded. At the same time we are convinced, that the Arabic, however melodious in the ears of a native, sounds harsh and unharmonious in that of a European.

"Bochart, Hottinger, Schultens, Pococke, Hunt, and Robertson, &c. have lavished a profusion of learning, in proving the affinity and dialectical cognation between the Hebrew and Arabic. The learned professors of the university of Leyden were the first who entered upon the career of Arabian learning. To them the European students are principally indebted for what knowledge of that language they have hitherto been able to attain. The palm of glory, in this branch of literature, is due to Golius, whose works are equally profound and elegant; so perspicuous in method, that they may always be consulted without fatigue, and read without languor. Erpenius's excellent grammar and dictionary will enable the student to explain the history of *Taimur*, by *Ibni Arabbah*. If he has once mastered that sublime work, he will understand the learned *Arabic* better than most of the Khatabs of Constantinople or of Mecca.

The Arabian language, however, notwithstanding all its boasted perfections, has undoubtedly shared the fate of other living languages; it has gradually undergone such considerable alterations, that the Arabic spoke and written in the age of Mohammed may be now regarded as a dead language; it is indeed so widely different from the modern language of Arabia, that it is taught and studied in the college of Mecca just as the Latin is at Rome.

SECT. IV. Of the CHALDEAN, PHOENICIAN, ETHIOPIAN or AETHIOPIAN, and EGYPTIAN LANGUAGES.

"As there is a very strict dialectical analogy among these languages," (continues our learned author) "we have arranged them all under one section; since what is observed relating to one of them may be extended to them all.

"The Chaldeans, or *Chafidim*, as they are called in Scripture, were the descendants of Chafed the son of Nahor, the brother of Abraham. They drove the Cushim or Arabians out of Babylonia, and possessed themselves of that country at a very early period. As they were the posterity of Nahor, the descendant of Heber, they undoubtedly spoke the original Hebrew tongue, as well as the other branches of that family. But being an ingenious inventive people, they seem to have polished their language with much care and delicacy.

"The only genuine remains of the ancient Chaldaic language are to be found in the Hebrew Scriptures; and those are to be contained in 268 verses, of which we have 200 in Daniel, reaching from verse 4th, chap. ii. to chap. viii. exclusive; in Ezra 67, in chap. iv. 17 verses; chap. v. 17; chap. vi. 18; and in chap. vii. 15; in Jeremiah, chap. x. there is extant only one verse. From these fragments, compared with the Hebrew, it plainly appears, that the difference between that language and the Chaldaic is scarce equal to that between the Doric and Ionic dialects of the Greek.

"Whatever

"Whatever might have been the form of the most ancient Chaldaic letters, it is generally known that the beautiful square characters, in which the Hebrew Scriptures began to be written after the age of Ezra, were current among them at an era prior to the Babylonish captivity. Those elegant characters were probably the invention of the Chaldean academies, which were established in various parts of that extensive and fertile country.

"The Chaldean declensions and conjugations differ so little from the Hebrew modifications, that it would be superfluous to dwell upon them. The most effectual way to acquire an idea of the ancient Chaldaic, is to decompound the names confessedly of that dialect, which occur in many places of Scripture. By this method of proceeding, its beautiful structure and expressive energy will be readily comprehended, even by the most illiterate classes of our readers. At the same time the Chaldaic and ancient Syriac bore so near a resemblance to each other, that they have generally been classed under one head."

Here Dr Doig displays his perfect knowledge of the Hebrew and Chaldaic languages by many instances of synonyms in both, from which we shall only quote a few lines:

"Almost all the Chaldean proper names which occur either in sacred or profane history are evidently of an Hebrew original, or cognate with that language. We shall subjoin a few examples. *Nabonassar* is evidently compounded of *Nabo* and *nazur*, both Hebrew words, signifying, to prophecy and to keep. *Nabopolassar* is made up of *Nabo Pul*, the same with *Bel, most high*, and *Azer*, girded, alluding to arms. *Belefs* is made up of *Bel* and *Esba*, fire, *Nebuchadnezzar*, *Belshazzar*, *Beltisbazzar*, *Neriglissar*, *Nebuzaradan*, *Rabmag*, *Rabfarris*, *Nergal-Sharezzer*, *Rabshakeb*, *Ezrabaddon*, *Merodach*, *Evil-Merodach*, and numberless others, are so manifestly reducible to Hebrew vocables, when decompounded, that the oriental scholar will readily distinguish them.

"Names of places in the Chaldaic are likewise so nearly Hebrew, that nothing but the dialectical tone separates them. Thus, *Ur* of the Chaldeans is actually *our light*, that city being sacred to the sun; *Sippora* is plainly the Hebrew word *Zipporah*; *Carchemish*, a city on the Euphrates, is evidently composed of *Kir* or *Kar*, a city, and *Chemish*, a name of the sun. In short, every Chaldean or old Syrian word now extant, without any difficulty, bewray their Hebrew original.

"We now proceed to the consideration of the PHœNICIAN language, which is known to have been that of the ancient Canaanites. That this was one of the original dialects, and consequently a cognate of the Hebrew, is universally acknowledged. Instead, therefore, of endeavouring to prove this position, we may refer our readers to the works of the learned Mr Bochart, where that author has in a manner demonstrated this point, by deriving almost all the names of the Phœnician colonies from the Hebrew, upon the supposition that the dialect of those people was closely connected with that tongue. St Augustine, *de Civitate Dei*, has observed, that even in his time many of the vulgar in the neighbourhood of Car-

thage and Hippo spoke a dialect of the old Punic which nearly resembled the Hebrew. Procopius, *de bello Gotb.* informs us, that there existed in his days in Africa a pillar with this inscription in Hebrew, "We flee from the face of Joshua the robber, the son of Nun." The names of all the ancient cities built by the Carthaginians on the coast of Africa are easily reducible to a Hebrew original. The Carthaginian names of persons mentioned in the Greek and Latin history, such as Himilco, Hamilcar, Asdrubal, Hannibal, Hanno, Dido, Anna or Hannah, Sopbonisba, Gisico, Maherbal, Adherbal, &c. all breathe a Hebrew extraction.

"The Greeks borrowed a great part of their religious worship from this people; of consequence, the names of most of their gods are Phœnician. Almost every one of these is actually Hebrew. The names of persons and places mentioned in the fragments of Sanchoniathon, preserved by Eusebius, are all of Hebrew complexion. The names mentioned in the Hebrew Scriptures, of places which belonged to the Canaanites prior to the invasion of the Israelites under Joshua, are as much Hebrew as those which were afterwards substituted in their stead.

"The island of MALTA (anciently *Melita*) was inhabited by a colony of Phœnicians many ages before the Moors took possession of it. Among the vulgar of that island many Punic vocables are current to this day, all which may be readily traced up to the Hebrew fountain. To these we may add many inscriptions on stones, coins, medals, &c. which are certainly Phœnician, and as certainly of Hebrew extraction."

Before proceeding to treat of the ancient language of the ETHIOPIANS, our learned author gives an ingenious dissertation, with many quotations from Josephus, Diodorus the Sicilian, Diogenes Laertius, &c. from which he infers, that "the Ethiopians were a colony of Cushites; were originally sovereigns of Shinar or Chaldea, and consequently spoke either Chaldaic or a dialect of that tongue; that their colonists must have used the same language; that the ancient Ethiopians were a people highly polished, and celebrated in the most early ages on account of their virtue and piety; and that the common letters of that people were the sacred character of the Egyptians, or the *Cushite*, (see *Señ. III.*) For further information we refer our inquisitive readers to the very learned JOH. LUDOLF's excellent grammar and dictionary of the Abyssinian or Geze tongue. We shall here only endeavour to gratify them with a very brief account of the modern Ethiopic Abyssinian tongue; for which we are indebted to the late James Bruce, Esq. that indefatigable and adventurous traveller.

"The most ancient language of Ethiopia (now called ABYSSINIA) was the *Geze*, which was spoken by the ancient Cushite shepherds. This approaches nearest to the old Chaldaic. Upon a revolution in that country, the court resided many years in Amhara (see ETHIOPIA, § 16); where the people spoke a different language, or at least a very different dialect of the same language. During this interval, the *Geze*, or language of the shepherds, was dropt, and retained only

only in writing, and as a dead language; the sacred Scriptures being in that tongue only saved it from going into disuse. This tongue is exceedingly harsh and unharmonious. It is full of these two letters D and T, in which an accent is put that nearly resembles stammering. Considering the small extent of sea that divides this country from Arabia, we need not wonder that it has great affinity with the Arabic. It is not difficult to be acquired by those who understand any other of the oriental languages; and as the roots of many Hebrew words are only to be found here, it seems to be absolutely necessary to all those who wish to obtain a critical skill in that language.

"The Ethiopic alphabet consists of 26 letters, each of which, by a *virgula* or point annexed, varies its sound in such a manner, as that those 26 form as it were 62 distinct letters. At first they had but 25 of these original letters, the Latin P being wanting; so that they were obliged to substitute another letter in its place. *Pardus*, for example, they call *Taulus*, *Aulus*, or *Caulus*: *Petros* they pronounce *Ketros*. At last they substituted T, and added this to the end of their alphabet: giving it the force of P, though it was really a repetition of a character rather than the invention of a new one. Besides these, there are 20 others of the nature of diphthongs.

"The Amharic, during the long banishment of the royal family in Shoa, became the language of the court, and 7 new characters were added to answer the pronunciation of this new language; but no book was ever yet written in any other language than *Geez*. There is an old law in the country, handed down by tradition, that whoever shall attempt to translate the Holy Scripture into Amharic or any other language, his throat shall be cut after the manner in which they kill sheep, his family sold to slavery, and their houses razed to the ground.

"The most ancient name of EGYPT was *Mizraim*, of consequence the inhabitants still call it *Mesri*. It appears from the sacred historian, that it was inhabited by the descendants of Mizraim, the 2d son of Ham. Mizraim had several sons, who settled in that country. The language of the Mizraim appears to be one of the sister dialects of the Hebrew, Phœnician, Arabic, Chaldaic, &c. But the origin of that people, their language, religion, laws, and institutions, have been so warped and confounded, both by their own historians and those of other countries, that one is scarce able to determine what to believe or what to reject." But we are assured by the sacred records, that Egypt was a populous, rich, and flourishing kingdom, as early as the age of Abraham. Had the Delta, or *Lower Egypt*, been a pool of stagnating water, (as Herodotus, Diodorus, Strabo, &c. pretend,) at any time after the general deluge, it could not have been drained, cleared, cultivated, and stocked with inhabitants, so early as the days of Abraham.

"Diodorus Siculus, however, is positive that the Egyptians were a colony of Ethiopians; and this he endeavours to prove by the similarity of features, customs, laws, religious ceremonies, &c. between the two nations. That there was a con-

stant intercourse of good offices between these two branches of the Hamites, cannot be questioned.

"We have already hinted our opinion of the nature of the Egyptian language; but because Egypt is generally thought to have been the native land of hieroglyphics, and because many are of opinion that hieroglyphical characters were prior to alphabetical, we shall hazard a few conjectures with respect to that species of writing.

"The end of speech in general, is to enable men to communicate their thoughts and conceptions one to another when present; the use of writing is to perform the same office when people are at a distance. Hieroglyphics are said to have been invented to supply this defect. The most ancient languages were every where full of tropes and figures borrowed from sensible objects. This circumstance would naturally suggest to savages the idea of conveying their sentiments to each other, when absent, by delineations of corporeal objects. Thus, if a savage asked a loan of his friend's horse, he might convey to him the figure of that animal; and so of others. This was the very lowest species of ideal communication, and has been styled *picture-writing*.

"Some savage leader, more sagacious than the vulgar herd, would observe that certain sensible objects were fitted to represent certain human passions, and even some abstract ideas. In this case a *horn* might be the emblem of *power*, a *sword* of *bravery*, a *lion* of *fury*, a *fox* of *cunning*, a *serpent* of *malice*, &c. By and by artificial signs might be contrived to express such ideas as could not readily be denoted by bodily objects. This might be called *symbolical writing*. Such was the foundation of the Chinese characters; and hence that prodigious number of letters of which the written language of that people is composed. Farther they could not proceed, notwithstanding their boasted inventive powers; and farther, we believe, no nation ever did proceed, who had once no other characters but hieroglyphical. The Mexicans had arrived at hieroglyphical writing, but had not taken one step towards alphabetical. The Hurons employ hieroglyphical symbols, but never entertained a single idea of alphabetical. In a word, we think that there is not the least analogy between these two species to conduct from the one to the other; we are therefore of opinion, that hieroglyphical characters were never the vulgar channels of ideal conveyance among civilized people.

"In this point we differ from many learned, judicious, and ingenious writers; some of whom have investigated the intermediate stages through which the fabricators of characters must have passed from hieroglyphical to alphabetical writing. For our part, we have endeavoured to prove, that alphabetical writing was an antediluvian invention: and we now lay it down, that among all those nations which settled near the centre of civilization, hieroglyphics were, comparatively, a modern fabrication.

"The Orientals are extravagantly devoted to allegory and fiction. Plain unadorned truth with them has no charms. Hence that extravagant medley of fables and romance with which antiquity is replete, and by which all ancient history

is disguised and corrupted. Every doctrine of religion, every precept of morality, was tendered to mankind in parables and proverbs. It was among the ancients an universal opinion, that the most sacred arcana of religion, morality, and the sublime sciences, were not to be communicated to the *uninitiated rabble*. For this reason every thing sacred was involved in allegorical darkness. (See MYSTERIES, § 3, 4.)

"Here, then, we ought to look for the origin of hieroglyphical or picture-writing among the civilized nations of the east. They employed that species of writing to conceal the most important heads of their doctrines. The Egyptian priests were most celebrated for their skill in devising those emblematical representations; but other nations likewise employed them. We learn from the fragments of Berofus, preserved by Syncellus and Alexander Polyhistor, that the walls of the temple of Belus at Babylon were covered all over with those emblematical paintings. These characters were called *ἱερογλυφικά*, because they were chiefly employed to represent sacred objects; and *γλυφικὰ*, because they were originally carved or engraved. Their name points to their original use. See Herodot. l. ii. Diod. Sic. l. i. Strabo, l. xvii. Plut. Isis and Osiris; Clem. Alex. Euseb. Præp. Evang. Horapollo's Hieroglyphica, &c.

"The Egyptians ascribed the invention of letters to *Tboth*, *Theuth*, or *Thyoth*; the Greek *Ἡεϋς*; and the Roman *Mercurius*. (See HERMES, MERCURY, and THOTH.) He was probably some eminent inventive genius, who flourished during the first ages of the Egyptian monarchy, and taught the rude savages the art of writing.

"According to Diodorus Siculus, the Egyptians had two kinds of letters; the one sacred, the other common: the former the priests taught their own children, the latter all learned promiscuously. Clemens Alex. mentions three different styles of writing employed by the Egyptians: 1. *Epistolography*, or writing letters; 2. the sacred character, which the sacred scribes employed; 3. the hieroglyphic character, one part of which is expressed by the first elements, and called *Cyriologic*, that is, *capital*, and the other *symbolic*.

"The most faithful specimen of the vulgar language of the Egyptian, is, we believe, still preserved in the Coptic, which, however, is so replete with Grecisms, that it must be difficult to trace it out. Under the Ptolemies, the Greek was the language of the court, and consequently must have diffused itself over all the country. Hence, we believe, two thirds of the Coptic are Greek words, diversified by their terminations, declensions, and conjugations only. See Christian Scholtz's Egyptian and Coptic grammar and dictionary, corrected and published by Godfred Woide, Oxford, 1788.

"The Egyptians and Phœnicians must have spoken the same language, one of the sister dialects of the Hebrew, Chaldean, Arabian, Cushite, &c. This is not a mere conjecture; it may be proved by many examples. It is true, that when Joseph's brethren went down to Egypt, they could not understand the Egyptian idiom which he spoke; nor would he, had he been actually an Egyptian, have understood them without an interpreter.

But by this time the Egyptian had deviated considerably from the original language of mankind. The Erse, spoken in the Highlands of Scotland; and the Irish, are known to be both branches of the old Celtic; yet a Scotch Highlander and an Irishman can hardly understand each other. The Hebrew dialect had been in a manner stationary; from the migration of Abraham to that period; whereas the Egyptian, being spoken by a powerful, civilized, and highly cultivated people, must have received many improvements in two centuries.

"CADMUS was originally an Egyptian; that leader brought a new set of letters into Greece. These are generally deemed to be Phœnician. They were nearly the same with the ancient Pelasgic. Danaus, Perseus, Lelex, &c. were of Egyptian extraction; they too adopted the Cadmean characters, without substituting any of their own. The Jonim, or IONIANS, emigrated from Gaza, a colony of Egyptians, and their letters are known to have differed very little from those of Cadmus and the Pelasgi. The conclusion, therefore, is, that the vulgar Egyptian letters were the same with the Phœnician.

"We are sensible that there are found upon Egyptian monuments characters altogether different from those we have been describing. The Ethiopians, the Chaldeans, the Persians, the Greeks, the Romans, the Saracens, have, at different times, been sovereigns of that unhappy country. Perhaps other nations, whose memory is now buried in oblivion, may have erected monuments, and covered them with inscriptions composed of words taken from different languages."

The learned Dr next proceeds "to show, that most part of the names of persons and places, &c. which have been conveyed down to us, may, in general, be reduced to a Hebrew, Phœnician, Syrian, or Chaldean original." This he does in a manner which must be highly interesting to those who are acquainted with the oriental languages; but which, to the majority of English readers, would afford neither instruction nor entertainment. But from this specimen Dr Doig seems clearly to prove, that the Egyptian language, in the more early ages, was one of those dialects into which that of the descendants of the postdiluvian patriarchs was divided, a few centuries after the deluge." Our learned readers may consult Bochart's *Chanaan*, Walton's *Proleg.* Gebelin's *Monde Prim.* Jameson's *Spicilegia*, &c.

SECT. V. Of the PERSIAN LANGUAGE.

"THE PERSIAN language (says Dr Doig,) is divided into the ancient and modern; the former of which is at this day very imperfectly known, the latter is at present one of the most expressive, and at the same time one of the most highly polished in the world.

"When Mohammed was born, and ANU'SHIRAVAN, whom he calls the *just king*, sat on the throne of Persia, two languages were generally prevalent in that empire. The one was called *Deri*, and was the dialect of the court, being only a refined and elegant branch of the *Parfi*; and that of the learned, in which most books were composed, and which had the name of *Pahlavi*; either from

from the heroes who spake it in former times, or from *Pahlvi*, a tract of land which included some considerable cities of *Iran*. Besides these a very ancient and abstruse tongue was known to the priests and philosophers, called the language of the *ZEND*, because a book on religious and moral duties which they held sacred, and which bore that name, had been written in it; while the *Pazend* or comment on that work was composed in *Pahlavi*, as a more popular dialect. The letters of this book were called *zend*, and the language *avesta*.

"The *ZEND* and the old *Pahlavi* are now almost extinct in *Iran*, and very few even of the Guebres can read it; while the *Parfi*, remaining almost pure in *Shabnameh*, has, by the intermixture of Arabic words, and many imperceptible changes, now become a new language, exquisitely polished by a series of fine writers both in prose and verse.

"The very learned Sir William Jones is confident that the *Parfi* abounds with words from the *Shanferit*, with no other change than such as may be observed in the numerous dialects of India; that very many Persian imperatives are the roots of *Shanferit* verbs; and that even the moods and tenses of the Persian verb substantive, which is the model of all the rest, are deducible from the *Shanferit* by an easy and clear analogy. From this he infers that the *Parfi*, like the various idiom dialects, is derived from the language of the Bramins. This conclusion, however, is doubted by Dr Doig. "The *Pazend*, according to Sir William, was a dialect of the Chaldaic;" and of this he exhibits various etymological proofs, which we need not quote, but from which "it plainly appears, 1st, that *Pahlavi* was the ancient language of Persia; and, 2d, that the ancient Persian was a cognate dialect of the Chaldean, Hebrew, Arabic, Phœnician, &c. M. Anquetil has annexed to his translation of *Zendavesta* two vocabularies in *Zend* and *Pahlavi*, which he found in a collection of *Rasavayet* or *Traditional Pieces* in modern Persian. His vocabulary of the *Pahlavi* confirms this opinion concerning the Chaldic origin of that language. But with respect to the *Zend*, it abounded with vast numbers of pure *Shanferit* words, to such a degree, that six or seven words in ten belonged to that language.

"From this it would appear, that the oldest languages of Persia were Chaldaic and *Shanferit*; and that when they had ceased to be vernacular, the *Pahlavi* and *Zend* were deduced from them respectively, and the *Parfi* either from the *Zend*, or immediately from the dialect of the Bramins: but all had a mixture of Tartarian; for the best lexicographers assert, that numberless words in ancient Persian are taken from the Cimmericians. Colonies emigrated from Persia into Crim Tartary. Emigrants from those quarters must have found their way into Scandinavia, as numberless Persian words are still current in those regions.

"With respect to the *Zend*, it might well be a dialect of the *Shanferit*, and was probably a sacred language. If *ZOROASTRES*, or *ZARATUSHT*, as the orientals call him, travelled into Egypt, and was initiated in the mysteries of the Egyptian religion, he might be instructed in the sacred dialect of that people by the priests. When he re-

turned into Persia, and became the apostle of a new religion, he might compose the volume of his laws in the sacred language. This language then became that of the Magi, who concealed it from the uninitiated, as the priests did in Egypt, and the Brahmins in Hindostan.

"To corroborate the cognation between the Chaldean and *Pahlavi* languages, we shall subjoin a few arguments from the Mosiac history, and the other writings of the Old Testament.

"*ELAM* is always allowed to have been the progenitor of the Persians. This patriarch was eldest son of Shem the son of Noah; and his posterity settled near the descendants of Assur, Arphaxad, Lud, and Aram, the other sons of Shem. The country where they settled was denominated *EL-YMAIS* as late as the beginning of the Christian era. This name was retained till the Saracens conquered that country. The Elamites or Persians spoke a dialect of the primary language, which we have proved to have been the Hebrew.

"When the four eastern monarchs invaded the five cities of the plain in Canaan, (Gen. xiv.) *CHENORLAOMER*, king of *Elam*, was at the head of the confederacy. *Amraphael* king of *Shinar*, that is *Babylon* or *Chaldea*, *Arioch* king of *Ellasar*, and *Tidal*, king of some scattered nations in the neighbourhood, were his allies. This passage demonstrates, that *Elam*, *Shinar*, and *Ellazar*, lay contiguous, and were engaged in the same cause. Wherever this country is mentioned in Scripture prior to the era of *Daniel* and *Ezra*, it is always under the name of *Elam*.

"The Scythians, whom the old Persians called *Sakae*, *Sakæ*, and whom the moderns call *Turan*, often over-ran Persia at a very early period. The consequence was, an infusion of Scythian or Tartarian terms, with which that language was early impregnated. This probably occasioned the first deviation from the original standard. The conquests of Alexander, and the dominion of his successors, must, one would imagine, introduce an inundation of Greek words. That event, however, seems to have affected the language in no great degree, at least very few Grecian terms occur in the modern Persian.

"The empire of the *PARTHANS* produced a very important alteration upon the ancient Persian. They were a demi-Scythian tribe; and, as they conquered the Persians, retained the dominion for several centuries, and, incorporated with the natives, their language must have given a deep tincture to the original dialect of the Persians. Sir William Jones has observed, that the letters of the inscriptions at *Ispah* or *Persepolis*, bear some resemblance to the old Runic letters of the Scandinavians. Those inscriptions we take to have been *Parthian*. The Persians, it is true, did once more recover the empire; and under them began the reign of the *Deri* and *Parli* tongues: the former consisting of the old Persian and *Parthian* highly polished; the latter of the same languages in their uncultivated vernacular dress. In this situation the Persian language remained till the invasion of the Saracens in 636; when these barbarians over-ran that fine country; demolished every monument of antiquity, records, temples, palaces; massacred or expelled the ministers of the

the Magian idolatry; and introduced a language, though not entirely new, yet widely differing from the old.

"In modern Persian we find the ancient Persian names wonderfully distorted from that form under which they appear in the Scripture, in Ctesias, Megasthenes, and the other Greek authors. From this it has been inferred, that not only the Greeks, but even the Jews, have changed and metamorphosed them, to accommodate them to the standard of their own language. As to the Greeks, we know it was their practice; but the Hebrews, we make no doubt, wrote and pronounced the names of the Persian monarchs and governors nearly in the same manner with the native Persians. It is manifest, beyond contradiction, that they neither altered the Tyrian and Phœnician names of persons and places, when they had occasion to mention them, nor those of the Egyptians, when they occurred in their writings. The Babylonian and Chaldaic names, which are mentioned in the Old Testament, vary nothing from the Chaldean original. In Ezra, Nehemiah, and Esther, we find the Persian names faithfully preserved throughout.

"The fact is this: Our modern admirers of the Persic have borrowed their names of the ancient kings and heroes of that country, from romances and fabulous legends of modern date and composition. The archives of Persia were destroyed by the Saracens: nothing of importance was written in that country till two centuries after the era of Mohammed. What succeeded was all fictitious and romance. Upon this fabulous foundation, the learned Mr Richardson has erected a very romantic fabric, which he thinks sufficient to invalidate the credit of the most authentic Grecian historians of that empire; though the fables, on which he founds, were not written till near 1000 years after the pretended events had happened, and 200, after all the Persian records had been destroyed by the Saracens.

"After the decisive victory obtained over the Persians at Kadesia, their ancient government was overturned, their religion proscribed, their laws trampled under foot, and their civil transactions disturbed by the forcible introduction of the lunar for the solar kalendar; while their language became almost overwhelmed by an inundation of Arabic words; which from that period, religion, authority, and fashion incorporated with their idiom.

"From the 7th till the 10th century, the Persian tongue, now impregnated with Arabic words, appears to have been neglected. Bagdad, built by Almanzor, became soon after the year 762 the chief residence of the khalifs, and the general resort of the learned and the ambitious from every quarter of the empire. At length the accession of the Buyah princes to the Persian throne marked in the 10th century the great epoch of the revival of Persian learning. About 977 the throne of Persia was filled by the great Azaduddawla; who first assumed the title of *Sultan*. He was born in Isfahan, and had a strong attachment to his native kingdom. His court was the standard of taste and the residence of genius. The native dialect of the Prince soon became the general lan-

guage of composition in almost every branch of polite learning. From the end of the 10th till the 15th century may be considered as the most flourishing period of Persian literature. The epic poet FIRDÂUSI, in his romantic history of the Persian kings and heroes, displays an imagination and smoothness of numbers hardly inferior to Homer. The whole fanciful range of Persian enchantment he has interwoven in his poems, which abound with the noblest efforts of genius. This bard has stamped a dignity on the fictions of the east, equal to that which Homer has given to the mythology of ancient Greece. His language may be considered as the most refined dialect of the ancient Persian. Ebn Fekreddin Anju, in the preface to the dictionary called *Farhang Jehangiri*, says, that the Déri and the Arabic idioms were the languages of heaven.

"For near 300 years the literary fire of the Persians seems to have been almost extinguished. In taste, the orientals are undoubtedly inferior to the best writers of modern Europe; but in invention and sublimity, they are equalled by none. The Persians affect a rhetorical luxuriance, which to a European wears the air of unnecessary redundancy. Amongst the oriental historians, philosophers, rhetoricians, and poets, many will be found who would do honour to any age or people; whilst their romances, their tales, and their fables, stand upon a ground which Europeans have not powers to reach. The present language of Persia is partly Arabic and partly Persian, though the latter generally has the ascendancy. The former is nervous, impetuous, and masculine; the latter is flowing, soft, and luxuriant. Their letters are the Arabic with little variation; their alphabet consists of 32 letters, which, like the Arabic, are read from right to left. The letters are divided into vowels and consonants. The Arabic characters are written in a variety of different hands.

"There is a great resemblance between the Persian and English languages in the simplicity of their form and construction; having no difference of terminations to mark the gender either in substantives or adjectives; all inanimate things are neuter; and animals of different sexes have either different names, or are distinguished by the words, *ner* male, and *made* female. Sometimes indeed a word is made feminine after the manner of the Arabians, by having *u* added to it. The Persian substantives have but one variation of case, which is formed by adding a syllable to the nominative in both numbers; and answers often to the dative, but generally to the accusative case, in other languages. The other cases are expressed for the most part by particles placed before the nominative. The Persians have two numbers, singular and plural; the latter is formed by adding a syllable to the former. The Persian adjectives admit of no variation in the degrees of comparison. The comparative is formed by adding *ter*, and the superlative by adding *terin* to the positive.

"The Persians have active and neuter verbs, but many of their verbs have both an active and neuter sense, determined only by the construction. Those verbs have properly but one conjugation, and but three changes of tense; the imperative, the aorist, and the preterite; all the other tenses being

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being formed by particles or auxiliary verbs. The passive voice is formed by adding the *tenes* of the substantive verb to the participle of the active.

"In the ancient language of Persia, there were few or no irregularities; the imperative, which is often irregular in the modern Persian, was anciently formed from the infinitive, till the Arabs introduced their harsh consonants, which obliged the Persians to change the old termination of some verbs, and by degrees the original infinitive grew quite obsolete; yet they still retain the ancient imperative, and the aorists formed from it. This is the only anomalous part of the Persian language; which nevertheless far surpasses in simplicity all other languages ancient or modern. With respect to the more minute and intricate parts of this language, as well as its derivations, compositions, constructions, &c. we must remit our readers to Miriskie's *Institutiones Lingue Turcicae cum rudimentis parallelis linguarum Arab. et Pers.* Sir William Jones's Persian Grammar; Mr Richardson's Arabian and Persian Dictionary; D. Herbelot's *Bibl. Orient.* Dr Hyde de *Relig. vet. Pers.* &c. Numberless events are preserved in the writings of the orientals, which were never heard of in Europe, and must have for ever lain concealed from the knowledge of its inhabitants, had not the Persian and Arabic tongues been studied and understood by the natives of this quarter of the globe. Many of those events have been transmitted to posterity in poems and legendary tales like the Runic fragments of the north, the romances of Spain, or the Heroic ballads of our own country. The knowledge of these two languages has laid open to Europe all the treasures of oriental learning, and has enriched the minds of Britons with Indian science, as much as the produce of these regions has increased their wealth and enervated the constitution.

"As to poetry, the modern Persians borrowed their poetical measures from the Arabs: they are exceedingly various and complicated; they consist of 19 different kinds; but the most common of them are the *Iambic* or *Trochaic* measure, and a metre that chiefly consists of those compounded feet which the ancients called *Pyrrhic*, composed of iambi and spondee alternately. In lyric poetry their verses generally consist of 12 or 16 syllables: they sometimes, but seldom, consist of 14. Some of their lyric verses contain 13 syllables; but the most common Persian verse is made up of 11; and in this measure are written all their great poems, whether upon heroic or moral subjects, as the works of Eiradusi and Jami, the Bostar of Sadi, and the Mesnawi of Ghalaleddin. This sort of verse answers to our common heroic rhyme, which was brought to so high a degree of perfection by Pope. The study of the Persian poetry is so much the more necessary, as there are few books or even letters written in that language, which are not interspersed with fragments of poetry. As to their prosody, nothing can be more easy and simple."

SECT. VI. Of the SHANSCRIT and BANGALESE LANGUAGES.

"THE SHANSCRIT (says our author), though

one of the most ancient languages in the world, was little known even in Asia till about the middle of the 10th century. Since that period, by the indefatigable industry of the ingenious Sir WILLIAM JONES, and the other worthy members of that society of which he was founder and president, that noble and ancient language has at length been brought to light; and from it vast treasures of oriental knowledge will be communicated both to Europe and Asia; knowledge which, without the exertions of that establishment, must have lain concealed from the researches of mankind to the end of the world.

"The Shanscrut language has for many centuries lain concealed in the hands of the bramins of Hindostan. It is by them deemed sacred, and is of consequence confined solely to the offices of religion. Its name imports the *language of perfection*. It appears to have been once current over most of the oriental world. Traces of its original extent may be discovered in almost every district of Asia. Those who are acquainted with it have often found the similitude of Shanscrut words to those of Persian and Arabic, and even of Latin and Greek; and that not in technical and metaphorical terms, but in the ground-work of language, in monosyllables, the names of numbers, and appellations of such things as would be first discriminated on the dawn of civilization.

"The ancient coins of many different and distant kingdoms of Asia are stamped with Shanscrut characters, and mostly contain allusions to the old Shanscrut mythology. But though numberless changes and revolutions have convulsed Hindostan, that part of it which lies between the Indus and the Ganges still preserves that language inviolate. The fundamental part of the Shanscrut language is divided into three classes: *Dhaat*, or roots of verbs; *Shabd*, or original nouns; and *Evaṇa*, or particles. The latter are ever indeclinable, but the words comprehended in the two former classes must be prepared by certain additions and inflexions to fit them for composition. Not a syllable, not a letter, can be added or altered but by regimen; not the most trifling variation of the sense, in the minutest subdivision of declension or conjugation, can be effected without the application of several rules. The number of the radical or elementary parts is about 700; and to these, a very plentiful stock of verbal nouns owes its origin.

"The Shanscrut language is very copious and nervous. The first of these qualities arises in a great measure from the vast number of compound words with which it is almost overstocked. "The Shanscrut (says Sir William Jones,) like the Greek, Persian, and German, delights in compounds; but to a much higher degree, and indeed to such excess, that I could produce words of more than 20 syllables; not formed ludicrously like that by which the buffoon in Aristophanes describes a feast, but with perfect seriousness, on the most solemn occasions, and in the most elegant works." But the style of its best authors is wonderfully concise. In the regularity of its etymology it far exceeds the Greek and Arabic; and, like them, has a prodigious number of derivatives from each primary root. The grammatical rules also are numerous and difficult, though there are not many anomalies. There

There are 7 declensions of nouns, all used in the singular, dual, and plural numbers, and all differently formed, according as they terminate with a consonant, with a long or a short vowel; and as they are of different genders, not a nominative case can be formed to any one of these nouns without the application of at least *four rules*, which vary likewise with each particular difference of the nouns, as above stated: add to this, that every word in the language may be used through all the 7 declensions, which is a full proof of the difficulty of the idiom:—and consequently, (we may add) of the *imperfection* of this *very perfect* language.

“The Shanfcrit alphabet contains 50 letters; and it is one boast of the Brahmins, that it exceeds all other alphabets in this respect: but as of their 34 consonants, near half carry combined sounds, and six of their vowels are merely the correspondent long ones to as many short, the advantage seems to be little more than fanciful. The Shanfcrit poetry comprehends a very great variety of different metres, of 8, 11, 12, or 19 syllables. The Shanfcrit language is impregnated with Persian, Chaldaic, Phœnician, Greek, and even Latin idioms. This affords a presumption that it was one of those original dialects which were gradually produced among the descendants of Noah, in proportion as they gradually receded from the centre of population; and that the Hindoos were a colony of the descendants of the patriarch Shem.

“It appears, however, by almost numberless monuments of antiquity still existing, that at a very early period, a different race of men had obtained settlements in that country. It is generally admitted, that colonies of Egyptians had peopled a considerable part of Hindostan. Numberless traces of their religion occur every where in those regions. The learned president himself is positive, that vestiges of those sacerdotal wanderers are found in India, China, Japan, Tibet, and many parts of Tartary. Those colonists were zealous in propagating their religious ceremonies wherever they resided and travelled. There is even at this day a striking resemblance between the sacred rites of the vulgar Hindoos and those of the ancient Egyptians. Sir William Jones hath justly observed, that the letters of Shanfcrit, stripped of all adventitious appendages, are really the square Chaldaic characters. We learn from Cassiodorus, that the sacred letters of the Egyptians were Chaldaic, and it is allowed that those of the brahmins were of the same complexion.

“That the Egyptians had at a very early period penetrated into Hindostan, is universally admitted. Osiris, their celebrated monarch and deity, according to their mythology, conducted an army into that country; taught the natives agriculture, laws, religion, the culture of the vine, &c. Sesostris, another Egyptian potentate, likewise over-ran Hindostan with an army, and taught the natives many useful arts and sciences. When the pastor kings conquered Egypt, it is probable that numbers of the priests, to avoid the fury of the merciless invaders, left Egypt and went into India. These were the authors both of the language and religion of the brahmins. The Indians cultivated, improved, and diversified it.

“Though most of the ancient oriental tongues are read from right to left, like the Hebrew, Chaldaic, Arabic, &c. yet such as properly belong to the whole continent of India proceed from left to right, like those of Europe. The great number of letters, the complex mode of combination, and the difficulty of pronunciation, are considerable impediments to the study of the BENGAL language; and the ignorance of the people, and inaccuracy of their characters, aggravate these inconveniences.

“The Bengal alphabet, like that of the Shanfcrit consists of 50 letters, whose form, order, and sound, may be learned from Mr Halhed’s grammar. The vowels are divided into long and short, the latter of which are often omitted. Most of the oriental languages are constructed upon the same principle, with respect to the omission of the short vowel.

“In the Bengal language there are three genders. The terminations are *aa* for the masculine, and *ee* for the feminine. In Shanfcrit, the names of all things inanimate have different genders, founded on vague and incomprehensible distinctions: the same is the case with the Bengal.

“Every Shanfcrit noun has 7 cases, exclusive of the vocative; and therefore comprehend two more than even those of the Latin. The Bengal has only 5 cases.

“In most languages where the verb has a separate inflection for each person, that inflection is sufficient to ascertain the personality; but in Bengal compositions, though the first and second persons occur very frequently, nothing is more rare than the usage of the pronoun of the third; and names of persons are inserted with a constant and disgusting repetition, to avoid the application of the words *HE* and *SHE*. The second person is always ranked before the first, and the third before the second. The personal pronouns have 7 cases, which are varied in a very irregular manner.

“The Shanfcrit, the Arabic, the Greek and Latin verbs, are furnished with a set of inflections and terminations so comprehensive and so complete, that by their form alone they can express all the different distinctions both of persons and time. Three separate qualities in them are perfectly blended and united. Thus by their root they denote a particular act, and by their inflection, both point out the time when it takes place and the number of the agents. In Persian, as in English, the verb admits but of two forms, one for the present tense and one for the aorist; and it is observable, that while the past tense is provided for by a peculiar inflection, the future is generally supplied by an additional word conveying only the idea of time, without any other influence on the act implied by the principal verb.

Every Shanfcrit verb has a form equivalent to the middle voice of the Greek, used through all the tenses with a reflexive sense, and the former is even the most extensive of the two in its use and office: for in Greek the reflexive can only be adopted intransitively when the action of the verb descends to no extraneous subject; but in Shanfcrit, the verb is both reciprocal and transitive at the same time.

“Neither the Shanfcrit nor the Bengalese, nor the

the Hindostanic, have any word precisely answering to the sense of the verb *I have*, and consequently the idea is always expressed by a phrase synonymous with *est mihi*; and of course there is no auxiliary form in the Bengal verb correspondent to *I have written*, but the sense is conveyed by another mode. The verb substantive, in all languages, is defective and irregular, and therefore the Shanfcrit calls it a *semi-verb*. The present tense of this verb, in Greek, Latin, and Persian, appears to be derived from the Shanfcrit. In the Bengalese, this verb has but two distinctions of time, the present and the past; the terminations of the several persons of which serve as a model for those of the same tense in all other verbs respectively.

"Verbs of the Bengal language may be divided into three classes, which are distinguished by their penultimate letter. The simple and most common form has an open consonant immediately preceding the final letter of the infinitive. The second is composed of those words whose final letter is preceded by another vowel or open consonant going before it. The third consists entirely of causals derived from verbs of the first and second conjugations.

"The Greek verbs in μ are formed exactly upon the same principle with the Shanfcrit conjugations, even in the minutest particulars. Instances of this are produced in many verbs, which from a root form a new verb by adding the syllable *mi*, and doubling the first consonant. This mode furnishes another presumption of the Egyptian origin of the Shanfcrit. Many Greeks travelled into Egypt; many Egyptian colonies settled in Greece.

"To form the past tense, the Shanfcrit applies a syllable augment; the future has for its characteristic a letter analogous to that of the same tense in the Greek, and it omits the reduplication of the first consonant. The reduplication of the first consonant is not constantly applied to the present tense of the Shanfcrit more than to those of the Greek. The natural simplicity and elegance of many of the Asiatic languages are greatly debased and corrupted by the continual abuse of auxiliary verbs; and this inconvenience has evidently affected the Persian, the Hindostan, and the Bengal idioms.

"The infinitives of verbs in the Shanfcrit and Bengalese are always used as substantive nouns. In the Shanfcrit language, as in the Greek, there are forms of infinitives and of participles comprehensive of time; there are also other branches of the verb that seem to resemble the gerunds and supines of the Latin. All the terms which serve to qualify, to distinguish, or to augment, either *substance* or *action*, are classed by the Shanfcrit grammarians under one head: and the word used to express it literally signifies *increase* or *addition*. According to their arrangement, a simple sentence consists of three members; the *agent*, the *action*, the *subject*: which, in a grammatical sense, are reduced to two; the *noun* and the *verb*. They have a particular word to specify such words as amplify the noun which imports quality, and answers to our *adjectives* or *epithets*: Such as are applied

to denote relation or connection, are intimated by a *preposition*.

"The adjectives in Bengalese have no distinction of gender or number; but in Shanfcrit these words preserve the distinction of gender, as in the Greek and Latin. Prepositions are substitutes for cases. The Latin is less polished than the Greek, and of consequence bears a much nearer resemblance to the Shanfcrit, both in words, inflections, and terminations.

"The learned are now convinced that the use of numerical figures was first derived from India. Indeed the antiquity of their application in that country far exceeds the powers of investigation. All the numerals in Shanfcrit have different forms for the different genders, as in Arabic. There is a strong probability that the European method of computation was derived from India, as it is much the same with the Shanfcrit, though we think the Europeans learned it from the Arabians."

SECT. VII. Of the CHINESE LANGUAGE.

"THE Chinese, (says Dr Doig,) according to the most authentic accounts, are a people of great antiquity. Their situation was such, as, in the earliest ages of the world, in a great measure secured them from hostile invasion. As China is a large and fertile country, producing all the necessaries, conveniences, and even luxuries of life, its inhabitants were under no necessity of engaging in foreign commerce. Satisfied with the articles which their own country produced, they applied themselves entirely to agriculture and the arts connected with it; and their frugality, though their population was almost incredible, rendered the produce of their soil abundantly sufficient. Their inventions were their own; and as they borrowed nothing from other people, they gradually began to despise the rest of mankind, and, like the ancient Egyptians, branded them with the epithet of *barbarians*.

"These people had, at an early period, made amazing proficiency in the mechanical arts. Their progress in the liberal sciences was by no means in proportion. In mathematics, geometry, and astronomy, their knowledge was contemptible; and in ethics, their laws and customs prove their skill to have been truly superficial. They value themselves very highly upon their oratorical talents: and yet, of all languages spoken by any civilized people, their's is the least improved." The learned Dr Doig, who traces all other languages from that of Adam, is obliged to give up the Chinese.

"The language of the Chinese (says he) was totally different from those of all other nations, and bears very strong signatures of an original tongue. All its words are monosyllabic, and compositions and derivations are altogether unknown. Their nouns and verbs admit of no flexions: in short, every thing relating to their idioms is peculiar, and incapable of being compared with any other dialect spoken by any civilized people. Most barbarous languages exhibit something that resembles an attempt towards those diacritical modifications of speech; whereas the Chinese, after a space of 4000 years, have not advanced one step beyond the very first elements of ideal communication.

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(See CHINESE, § 16.) This circumstance is a plain demonstration, that they did not emigrate from that region where the primitive race of mankind is thought to have fixed its residence. Some have imagined, that they are a *Tartarian* race, which, breaking off from the main body of that numerous and widely extended people, directed their march towards the SE. There, falling in with delightful and fertile plains, they found themselves so well accommodated, that they dropped all desire of changing their habitations. The country of China is, indeed, so environed with mountains, deserts, and seas, that it would have been difficult to have emigrated. Secluded from the rest of mankind, the Chinese were left to the strength of their own inventive powers to fabricate a language, as well as the other arts, necessary for the support and convenience of life.

"Their stock of vocables, when they emigrated from Tartary, was neither ample nor accommodated to answer the purposes of the mutual conveyance of ideas. With this slender stock, however, they seem to have been satisfied. Instead of framing a new race of terms by compounding the primitive ones; instead of diversifying them by inflections, or multiplying them by derivatives, as is done in every other language; they rather chose to retain their prime words, and, by a variety of modifications introduced upon their orthography or pronunciation, to accommodate them to a variety of significations.

"The Chinese language must then have been a *Tartarian* dialect. The Chinese have not hitherto found out the art of composition of words. This is the more surprising, that, in the characters which form their written language, they employ many compositions. The character by which they represent *misfortune*, is composed of one hieroglyphic which represents a *house*, and another which denotes *fire*; because the greatest misfortune that can befall a man is to have his house on fire. With respect to the language which they use in speech, though they often employ many words to express one thing, yet they never run them together into one word, making certain changes upon them that they may incorporate the more conveniently, but always preserve them entire and unaltered.

"The whole number of words in the Chinese language does not exceed 1200: the nouns are but 316. It is surprising, that a people whose manners are polished and refined, should be able to express so many things as must attend such a course of life, by so small a number of words, and those too monosyllables. The difficulties which attend this singular mode must be felt almost every instant. Du Halde says that the Chinese have two different dialects: the one vulgar, which is spoken by the vulgar, and varies according to the different provinces; the other is called the *Mandarin language*, and is current only among the learned. The latter is properly that which was formerly spoken at court in the province of *Kiang-nan*, and gradually spread among the polite people in the other provinces. It is spoken with more elegance in the provinces adjoining to *Kiang-nan* than in any other part of the kingdom. By degrees it was introduced into all parts of the empire, and became the universal language.

We are therefore of opinion, that the modern language of the Chinese was deduced from the original Mandarin or court dialect, and that this last was an artificial speech fabricated by that people. The learned have long held it up as the primary dialect; because, say they, it bears all the signatures of an original unimproved language. In our opinion, nothing appears more *ingeniously artificial*. It is universally allowed, that in its structure, arrangement, idioms, and phraseology, it resembles no other language. Is not every learned man now convinced, that all the Asiatic languages yet known, discover unequivocal symptoms of their cognation and family resemblance? The Ethiopians, Chaldeans, Arabians, Persians, Egyptians, Hebrews, Phœnicians, the Brahmins, Bengalese, the Hindoos bordering upon China, all speak only different dialects of one language, varying from the original in dialect only, some in a greater some in a lesser degree: why should the Chinese alone stand altogether insulated and unallied? Our readers will agree with us, that had the language of the Chinese been the original language, a resemblance must have still existed between it and its descendants. If it had originated from any other language, it would have retained some characteristic features of its apparent archetype.

"The Chinese have an immemorial tradition, that their language was framed by Yao, their first emperor, to whom they attribute the invention of every thing curious, useful, and ornamental. Traditional history, when it is ancient, uniform, and universal, is generally well founded: we think this tradition may be fairly admitted as a collateral evidence.

"The paucity of vocables contained in this singular language, we think another presumption of its artificial texture. The Chinese *Onomatopœia*, (imposers of names), "would find it an arduous task to devise a great number of new terms, and would therefore rest satisfied with the smallest number possible. In other languages we find the like economy was observed. Rather than fabricate new words, men adapted old words to new, sometimes even to contrary significations. They also contrived to join several old ones into one; whence arose a numerous race of compounds. Derivatives too are fabricated for the same purpose. Instead of creating new vocables, old ones were compounded, diversified, deflected, ramified, metamorphosed, and tortured into a thousand different shapes.

"There are three different methods to enrich and extend the range of a language. 1st, By fabricating a multitude of words; the plan which has been pursued by the Arabs. 2d, By framing a multitude of compounds and derivatives, as in the Greek and the Sanscrit. 3d, By varying the signification of words without enlarging their number; as practised by the Chinese and their colonists. The Arabians have shewn the most fertile and inventive genius, since they have enriched their language by actually creating a new and numerous race of words. The fabricators of the Sanscrit and the collectors of the Greek have exhibited art, but comparatively little fertility of genius."

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"The Chinese (if we may believe their panegyrist,) perform all the offices of the most perfect language, by a few monosyllabic notes, simple, inflexible, and invariable, merely "by a particular modification of the sound." Dr Doig celebrates them for this method, as much more ingeniously artificial, than that adopted by all other nations. We cannot help differing from our learned author, and can see nothing ingenious in the whole Chinese system. The sole object of language is to communicate ideas with ease and perspicuity. How far the Chinese language is qualified for this purpose, let Dr Doig's own words declare. "Though the number of words, (says he,) in the Chinese language does not amount to above 1200, yet without multiplying words, the sense is varied almost in infinitum, by the variety of the accents, inflections, tones, aspirations, and the other changes of the voice and pronunciation; circumstances, which make those who do not thoroughly understand the language, frequently mistake one word for another." After this concession from its panegyrist, we need make no comment on the perspicuity of the Chinese language. The examples, however, given by the learned doctor of its ambiguity, but which he gives as examples of its copiousness, are worth quoting:

"The word *teou* pronounced slowly, drawing out the *v* and raising the voice, signifies a lord or master. If it is pronounced with an even tone, lengthening the *v*, it signifies a bog. When it is pronounced quick and lightly, it imports a kitchen. If it be pronounced in a strong and masculine tone, growing weaker towards the end, it signifies a column. By the same economy, the syllable *po*, according to the various accents, and the different modes of pronunciation, has eleven different significations. It signifies glass, to boil, to winnow rice, wife or liberal, to prepare, an old woman, to break or cleave, inclined, a very little, to water, a slave or captive.

"Again, the same word joined to various others, imports a great many different things; for example *mou*, when alone, signifies a tree, wood; but when joined with another word, it has many other significations. *Mou leo*, imports "wood prepared for building;" *mou lan*, is "bars, or wooden grates;" *mou hia*, "a box;" *mou fang*, "a chest of drawers;" *mou shang*, "a carpenter;" *mou eul*, a mushroom;" *mou nu*, "a sort of small orange;" *mou sing*, "the planet Jupiter;" *mou mien*, "cotton," &c. This word may be joined to several others, and has as many different significations as it has different combinations." Such is the copiousness and perspicuity of the language of the CHINESE; a people who have been to highly celebrated by the French philosophers of the present age, and whose pretended claims to antiquity have been set up in opposition to the chronology of the Scriptures; although founded on no better authority than that of their legendary history, partly destroyed, and but partly preserved in their absurd language, through the medium of their perplexed unintelligible hieroglyphics. We were the more surprised to find Dr Doig disposed to celebrate the learning and artificial language of this people, that he seems, from the whole of the rest of his treatise on phi-

lology, above quoted, to be a steady advocate for the authenticity and truth of the Scriptures of the Old Testament. Indeed the Chinese language bears decisive marks of its being artificial, for like all the works of art, it falls infinitely short of nature.

SECT. VIII. Of the GREEK LANGUAGE.

"THE Greeks, (says Dr Doig,) according to the most authentic accounts, were descended of Javan or Jon, the 4th son of Japhet, the eldest son of the patriarch Noah. The Scriptures of old, and all the orientals to this day, call the Greeks *Janim*, or *Juanam*, or *Javenoth*. At what period the colonists arrived in these parts cannot be certainly determined; nor is it of great importance. That they carried along with them into their new settlements the language of Noah and his family, is, we think, a point that cannot be controverted. We have endeavoured to prove that the Hebrew, or at least one or other of its sister dialects, was the primæval language of mankind. The Hebrew, then, or one of its cognate branches, was the original dialect of the Jonim or Greeks.

"Be that as it may, before these people make their appearance in profane history, their language deviates very widely from this original archetype. By what means, at what period, and in what length of time this change was introduced, is not easy to be elucidated. That it was progressive is certain.

"The colonies, which traversed a large tract of country before they arrived at their destined settlements, must have struggled with numberless difficulties in the course of their peregrinations. The earth, during the periods which immediately succeeded the universal deluge, must have been covered with forests, intersected with swamps, lakes, rivers, and numberless other impediments. As the necessities, and a few of the conveniences of life, will always engross the first cares of mankind, the procuring of these comforts will exclude all concern about arts and sciences which are unconnected with these pursuits. Hence most of those colonies, which migrated to a very great distance from the plains of Shinar, neglected the practice of the polite modes of civilization which their ancestors were acquainted with, and practised before their migration. Certain it is, that those nations which continued to reside in the neighbourhood of that centre of civilization, always appear in a cultivated state; while the colonists who removed to a considerable distance sunk into barbarism, at a period more early than the annals of profane history can reach. This appears to have been the situation of the primary inhabitants of Greece. Their own historians exhibit a very unpromising picture of their earliest progenitors. Diodorus Siculus, in delineating the character of the original men, sketched his draught from the first inhabitants of Greece. He represents them as absolute savages, going out in small parties to make war upon the wild beasts of the field, which kept them in continual alarm. "Necessity obliged them to band together for their mutual security; they had not sagacity enough to distinguish between the wholesome and poisonous vegetables; nor had they skill enough

to lay up and preserve the fruits of autumn for their subsistence during the winter." The scholiast on Pindar, describing the inhabitants of Peloponnesus, says, that the nymphs, called *Melisse*, prevailed upon men to relinquish the abominable practice of *eating raw flesh* torn from living animals, and persuaded them to use fruits for food.

He adds, that "in Peloponnesus, they honoured the nymphs, because they first pointed out the mode of living on the fruits of the earth, and put an end to the barbarous practice of feeding on *human flesh*. The same ladies too invented garments made of the bark of trees." Hecateus the Milesian, Strabo, Pliny, Herodotus, and other ancient authors give similar accounts of the savage state of ancient Greece. "But what clearly demonstrates the unpolished character of the ancient Greeks is, the extravagant honours lavished by them upon the inventors of useful and ingenious arts. Most of these were advanced to divine honours, and became the objects of religious worship to succeeding generations. (See MYSTERIES and MYTHOLOGY.) To these testimonies of the savagism of the original Greeks, others almost without number might be added. While matters were in this situation, a new colony arrived in those parts, which in a few years considerably changed the face of affairs. The people who composed this colony were called PELASGI: concerning whose origin, country, character, and adventures, much has been written, and many different opinions exhibited by the learned. The general opinion is that they were natives either of Egypt or Phœnicia."

An anonymous author quoted by Dr Doig, has proved by very plausible arguments, that these people could not be descendants of the Egyptians nor Phœnicians. He maintains, that the Pelasgi were a great and numerous tribe; that they overspread all the coast of Asia Minor from Mount Mycale to Troas; that they were masters at one time of all the Asiatic and Grecian islands; that they over-ran Greece and many of the neighbouring countries; and all this in less than half a century. These facts he proves from Homer, Diodorus Siculus, Pausanias, and other Greek authors of approved authenticity. He shows, that they were a civilized generation; that they were well acquainted with military affairs, legislation, agriculture, navigation, architecture, letters, &c. He insists that Phœnicia could not at any given period have furnished such a numerous body of emigrants. He believes that this event took place before the invasion of Canaan by the Israelites; that consequently the Pelasgic migration was not occasioned by that catastrophe. He has shown, that the Egyptians in the earliest ages were averse to foreign expeditions, especially by sea. He finds, that the Egyptian and Phœnician colonies, which afterwards settled in Greece, were enemies to the Pelasgi; and either subdued or expelled them. He concludes, that these people were the progeny of the Arabian shepherds, who, at a very early period subdued all Egypt. (See EGYPT, § 2.) After possessing that country about two centuries and a half, they were conquered by Amœnophis, who drove them out of the country. Upon this the fugitives retired to Palestine, where

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Manetho the Egyptian historian loses sight of them, and confounds them with the Israelites. This writer supposes that those fugitives gradually directed their course for the W. and NW. coasts of Asia Minor, whence they conveyed themselves over to Greece.

Such are the arguments by which this author supports his hypothesis. It is new, and appears by no means improbable. Our readers may consult Gebelin's Preliminary Discourse to his Greek Dictionary, Lord Monboddo's Origin and Progress of Language, vol. i. and Bryant's Ancient Mythology.

But "nothing is more certain than that the Pelasgi were the first people who civilized the savages of ancient Greece. Whether we suppose the Pelasgi to have been the offspring of the Phœnicians, Egyptians, or Arabian shepherds, it will make little difference as to their language; every man of learning is convinced that those three nations, especially at that early period, spoke a dialect of the Hebrew. The Pelasgi, then, must have spoken a dialect of that language when they arrived in Greece. Perhaps it might have undergone several changes, and acquired some new modifications, during so many years as had passed since they began to be a separate nation, and in the course of so many peregrinations. Some monuments of theirs still extant prove this fact beyond all contradiction. As these people incorporated with the aborigines of Greece, the remains of the original language of mankind, or at least so much of it as had been retained by them, gradually coalesced with that of the new settlers. From this it is obvious, that prior to the arrival of the new colonists from the East, the language now current among the two united tribes must have been a dialect of the Phœnician, Arabian, Hebrew, &c. Herodotus affirms, that the Pelasgi in his time, spoke a barbarous language, quite unintelligible to the modern Greeks. The reason of this difference between the language of the Hellenes or Greeks in the age of Herodotus, and that of the remains of the Pelasgi at that period, seems to be this: Prior to his time, the Greek language had undergone many changes and received vast improvements; whereas that of the remnant of the Pelasgi, who were now reduced to a low state, had remained stationary, and was then in the same predicament in which it had been a century after their arrival in the country.

"As the Pelasgi were a people highly civilized and well instructed in the various arts then known in the eastern world, and were skilled in agriculture, architecture, music, &c. the presumption is that they could not be unacquainted with alphabetical writing. This most useful art was well known in the countries from which they emigrated; and of course it is impossible to imagine that they did not export this art as well as the others. Diodorus Siculus pretends, that the Pelasgi received alphabetical letters from Cadmus and his Phœnician followers; that those letters were afterwards called *Pelasgic*, because the Pelasgi were the first people of Greece who adopted them. This must go to the score of national vanity, since very soon after he acknowledges that Linus wrote the exploits of the first Bacchus and several other roman-

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tic fables in Pelasgic characters; and that ORPHEUS, and PRONAPIDES the master of Homer, used the same kind of letters. Zenobius likewise informs us, that Cadmus slew Linus for teaching characters differing from his. These letters could be none other than the Pelasgic.

"PAUSANIAS, in his Attica, relates, that he himself saw an inscription upon the tomb of CORYMBUS, who lived at the time when CROTOPUS, who was contemporary with Deucalion, was king of the Argives. This inscription then was prior to the arrival of Cadmus; and consequently letters were known in Greece before they were introduced by his chief. It likewise appears from Herodotus himself, that the Ionians were in possession of alphabetical characters before the coming of the Phœnicians. "For (says he) the Ionians having received letters from the Phœnicians, changing the figure and sound of some of them, ranged them with their own, and in this manner continued to use them afterwards." If, then, the Ionians ranged the Phœnician characters with their own, it is obvious that they had alphabetical characters of their own.

"Monuments bearing inscriptions in the same letters have also been discovered in several parts of Greece and Italy, which place this point beyond the reach of controversy. As the Pelasgi emigrated from Arabia, the presumption is that their letters were Phœnician. They were said by Dr Swinton to have been 13 in number, whereas the Phœnician alphabet consists of 16. The three additional letters were probably invented by the latter people after the Pelasgi had left the eastern quarters. Besides, the Phœnician characters had not as yet received names; and accordingly the Romans, who derived their letters from the Arcadian Pelasgi, had no names for theirs. They were of course no other than the original letters of the Phœnicians in their first uncouth and irregular form; and for this reason they easily gave way to the Cadmean, which were more beautiful, more regular, and better adapted to expedition.

"Hitherto we have seen the Pelasgi and the Ionian incorporated, living under the same laws, speaking the same language, and using the same letters. But another nation, and one too of vast extent and populousness, had at an early period taken possession of a considerable part of the country afterwards distinguished by the name of *Hellas* or *Greece*. The Thracians were a great and mighty nation; inferior to none except the Indians, says Herodotus. These people, at a very early period, had extended their quarters over all the northern parts of that country. They were, in ancient times, a learned and polished nation. From them, in succeeding ages, the Greeks learned many useful and ornamental sciences. Orpheus the musician, the legislator, the poet, the philosopher, and the divine, is known to have been of Thracian extraction. Thamyris and Linus were his disciples, and highly respected among the Greeks for their learning and ingenuity. That these people spoke the same language with the Greeks, is abundantly evident from the connection between them and these Thracian bards. The Thracian language, then, whatever it was, contributed in a great proportion towards forming that of the

Greeks. From the remains of the Thracian dialect there appears to have been a very strong resemblance between it and the Chaldean. This position we could support by the most plausible etymological deduction, did our limits admit. It appears that the Thracians, Getæ, and Daci or Davi, spoke nearly the same language. The Goths, so much celebrated in the annals of the lower empire, were the descendants of the Getæ and Daci, and consequently retained the dialect of their ancestors.

"We have now found out three branches of the Greek language; that of the Ionian or *Aborigines*, that of the Pelasgic tribe, and that of the Thracians. These three were only different dialects of the very same original tongue. Some centuries after the arrival of the Pelasgi, CADMUS, an Egyptian, and a sojourner in Phœnicia, arrived in Bœotia with a multitude of followers. This chief and his countrymen introduced letters and several other useful improvements into the country. As these peoples were natives of Phœnicia, their alphabet was that of their native country, consisting of 16 letters. That the Phœnician alphabet was nearly the same with the Samaritan and Hebrew, has been so often and so clearly demonstrated by the learned of the two last centuries, that it would be superfluous to insist upon it. The Phœnicians wrote from right to left, and the old Grecian characters inverted exactly resemble the other.

"The names of the Cadmean characters are Syrian, which shows the near resemblance between that language and the Phœnician. They stand thus: *alpha, betha, gamma, delta*, &c. The Syrians used to add a to the Hebrew vocables; hence aleph becomes *alpha*, beth, *betha* or *beta*, &c. In the Cadmean alphabet we find the vowel letters, which is an infallible proof that this was the practice of the Phœnicians in the age of Cadmus; and this furnishes a presumption that the Jews did the same at the same period.

"It is evident that the oldest Greek letters, which are written from right to left, differ very little from those of the Pelasgi. The four double letters ξ , η , θ , χ , are said to have been added by Palamedes about 20 years before the war of Troy. Simonides is generally supposed to have added the letters ζ , ν , ψ , though it appears by some ancient inscriptions that some of these letters were used before the days of Palamedes and Simonides. In the year 1456 seven brazen tables were discovered at Engubium, a city of Umbria in the Appennines, of which five were written in Pelasgic or Etruscan characters, and two in Latin. The first of these tables is thought to have been composed about 168 years after the taking of Troy, or 1206 years before Christ. By comparing the inscription on these tables with the old Ionic characters, the curious have been enabled to discover the resemblance.

"The old Ionic characters, written from right to left, continued in general use for several centuries: It was composed of the Cadmean and Pelasgic characters, with some variations of form, position, and sound. The Athenians continued to use this character till the year of Rome 350. The old Ionic was gradually improved into the new, and this quickly became the reigning mode. After the old Ionic was laid aside the (*Βυζαντινὴ*) *Busitrophedon*

Bustrophedon came into custom, which goes backwards and forwards as the ox does with the plough." See BOUSTROPHEDON. "The words were all placed close together, and few small letters were used before the 4th century. If our curious readers would wish to know more of letters and alphabets, we must remit them to Chishul, Morton, Postellus, the great Montfaucon, Gebelin, Aftle, &c. Having now sufficiently proved that the Greek alphabet was derived from the Phœnician, in order to convince our illiterate readers of the certainty of our position, we shall annex a scheme of both alphabets, to which we shall subjoin some strictures upon such letters of the Greek alphabet as admit any ambiguity in their nature and application.

"A, *alpha*, had two sounds, the one broad like *a* in the English word *all*; the other slender, as *e* in *end*, *spend*, *defend*. The Hebrews certainly used it so, because they had no other letter to express that sound; the Arabs call the first letter of their alphabet *eliph*; and they as well as the Phœnicians employ that letter to express both the sound of A and E promiscuously. The Greeks call their 5th letter *ε*, that is, E slender, which seems to have been introduced to supply the place of A slender.

"H, *eta*, was originally the mark of the *spiritus asper*, and no doubt answered to the Hebrew *n*. It is still retained in that capacity in the word *ΗΕΚΑΤΟΝ*, and in words with the *spiritus asper* beginning, books, chapters, section, &c. E originally marked both the sound of *ε* and *η*; that is, it was sometimes sounded short as at present, and sometimes long, where it is now supplied by H. As it was found convenient to distinguish these two different quantities of sound by different letters, they adopted H, the former *spiritus asper*, to denote the long sound of E, and substituted the present *spiritus asper* ['] in its place.

"I, *iota*, is the Hebrew or Phœnician *jod* or *yod*. We imagine it originally served the purpose of both *iota* and *ypsilon*. It had two different sounds; the one broad and full, the other weak and slender. The latter had the sound of the modern *υ*. That this was actually the case, appears in several monumental inscriptions: And upon this depends the variation of some cases of the demonstrative pronoun and of the second declension.

"O, *omicron* or small *o*, in the original Greek, had three different sounds. It sounded *o* short, as at present; and likewise *o* long, now denoted by *ω* or large *O*. It likewise marked the sound of the improper diphthong *ou*, sounded like the English diphthong *oo*. The *ω* was taken from the Phœnician *vau* or *U*.

"τ, *upsilon* was adopted to supply a mark for the sound of I slender.

"Z, *zeta*, is compounded of *ε*. Dion. Halic. however, informs us that this letter should be pronounced *εδ*, according to the Doric plan.

"θ, *theta*, was not known in the old Greek. It is compounded of τ and the *spiritus asper*, both which were of old written separately thus TH.

"Ξ, *xi*, is compounded of *γ*, *κ*, *ξ*. These letters, too, were originally written separately.

"Φ, *phi*. This letter is compounded of *β*, or *φ*, and the *spiritus asper*: thus ΦΗ, ΠΗ.

"χ, *chi*, like the foregoing, is compounded of *γ*, or *κ*, and the *spiritus asper* as above.

"ψ, *psi*, like some of the rest, is made up of *β*, or *κ*, which, too, were originally written in separate characters.

"Every language, we believe, was originally composed of inflexible words. One of the first attempts towards forming the variations, now denominated *declensions* and *conjugations*, would probably be made upon the *demonstrative* article and the *substantive* verb. In the Greek tongue this was evidently the method.

"The original Greek article was imported from the east. It was the Hebrew or Phœnician *n* *ha*. This particle sometimes signifies *one*, and sometimes it answers to our demonstrative *the*; both in its adverbial and demonstrative capacity it imports demonstration. In the earliest stages of the two oriental languages, it was probably written apart, as *ba melech* "the king." In process of time it came to be joined with the following word, as *Hammelech*. From this we think the Greek article was deduced. It is still retained in the Doric dialect in its pristine character. The difference between *ho* and *ha* in the eastern language is nothing. Here then we have the articles *δ* masculine and *ἡ* feminine. Upon these several changes were superinduced, to render them more useful for the purposes of language."

After this our learned author displays his perfect knowledge of the Greek language, by enlarging upon the different parts of speech, upon which he makes a number of judicious observations, but which our room permits us not to quote; nor do we think it would be of great importance to any reader but a student of the Greek language, who certainly would not trust his success in such a study to any thing that he could expect to find under PHILOLOGY, in a work like ours. We shall therefore content ourselves with quoting only a few more of the learned Doctor's general remarks, which we think will be interesting to readers of all classes.

"We have already demonstrated (says he) that the *Ionim* or Aborigines of Greece were a race of barbarians; that their language or rather jargon was of the same texture. The Pelasgi found both the people and their speech in this uncultivated state. These people arrived in Greece about the year before Christ 1760. It was then that the language of Greece began to be cultivated. Before the age of Homer the work seems to have been completed. Nothing of consequence was afterwards added to the original stock. Homer was born *an. ante Chr.* 1041; consequently the cultivation of the Greek tongue was completed in about 700 years. But if Orpheus, Linus, Tamyris, &c. wrote long before Homer, as they certainly did, that language was arrived nigh the standard of perfection 200 years before; by which computation the period of its progress towards its stationary point is reduced to 500 years. But, as the Pelasgi were a colony of foreigners, we ought to allow them one century to incorporate with the natives, and to communicate their language, laws, manners, and habits, to the aborigines. By this deduction we reduce the term of cultivation to less than four centuries.

"During this period Greece was furiously agitated by internal wars. That country was divided into a number of independent states, which were perpetually engaged in quarrels. The profession of arms was necessary for the preservation of the state; and the man of prowess was honoured as a demigod. The Greek tongue was then rough and unpolished; because, like the ancient Romans, the brave men were more disposed to *act* than to *speak*.

"There has appeared among barbarous or half-civilized people a description of men whose profession it has been to frequent the houses or palaces of the great, to celebrate their achievements, or those of their ancestors, in the sublimest strains of heroic poetry. Accordingly we find, that the Germans had their *bards*, the Gauls their *fads*, the Scandinavians their *scalds* or *scalders*, the Irish their *seals*, all retained for that very purpose. They lived with their chieftains, attended them to battle, were witnesses of their heroic deeds, animated them with martial strains, and celebrated their prowess if they proved victorious; or, if they fell, raised the song of woe, and chanted the mournful dirge over their sepulchres." See *BARDS*, *MINSTRELS*, &c.

"Among the ancient Greeks there was a numerous tribe of men of the same description, who were at once poets and musicians, and whose office it was to celebrate the praises of the great, and to transmit their exploits to posterity in the most exaggerated encomiums. These poetical vagrants were styled *Aoidoi* or songsters. Some of these lived in the houses of great men; while others, less skilful or less fortunate, strolled about the country in the manner above described. The more illustrious of those *Aoidoi* who were retained in the temples of the gods, were the first improvers of the language of the Greeks. Among the Hebrews the first poetical compositions were hymns in honour of Jehovah." (See *Exod. xv. Judges v. &c.*) "In Greece, when all was confusion and devastation, the temples of the gods were held inviolable. There the *Aoidoi* improved their talents, and formed religious anthems on those models which their progenitors had chaunted in the east.

"The language of the Greeks was yet rugged and unmelodious; their first care was to render it more soft and flexible. They enriched it with vocables suited to the offices of religion. Homer every where mentions a distinction between the language of gods and men. The priests concurred in promoting this important purpose. From this source the strolling *Aoidoi* drew the rudiments of their art; and from the vulgar deduced the elements of a polished style. From these *Aoidoi* of the superior order, the Greek tongue acquired that variety and flexibility, from which it has derived that ease, beauty, and versatility, by which it surpasses most other languages.

"Few colonies have emigrated from any civilized country without a detachment of priests in their train. The supreme powers have always been worshipped with music and dancing. The Hebrews, Phœnicians, and Egyptians, delighted in these musical and jocund festivals. The priests who attended the Idæans, Dorians, Æolians, Thebans,

Athenians &c. from the east, introduced into Greece that exquisite taste, those delicate musical feelings, which distinguished the Greeks from all the neighbouring nations. Hence that numerous race of *onomatopœists*, by which the Greek language is invested with the power of expressing almost every passion of the human soul, in such terms as oblige it to feel and actually to assimilate to the passion it would excite. (See *ONOMATOPOEIA*.) Numberless instances of this occur in every page of Homer, Hesiod, Pindar, Sophocles, Euripides, and even of Aristophanes; to quote instances would be to insult the Greek student."

Here, after giving a short history of Grecian poetry, Dr Doig enumerates the most eminent of those Greek poets who successively brought that art and the language to perfection, particularly Orpheus, Linus, Musæus, Melampus, Olen, Hesiod, and Homer.

"The Grecian poets (says our author) enjoyed another advantage which that class of writers have seldom possessed, which arose from the different DIALECTS into which their language was divided. All those dialects were adopted indifferently by the prince of poets; a circumstance which enabled him to take advantage of any word from any dialect that suited his purpose. This rendered versification easy, and diffused an agreeable variety over his composition. He even accommodated words from Macedonia, Epirus, and Illyricum, to the purposes of his versification. Besides, the laws of quantity were not then clearly ascertained. Succeeding poets did not enjoy these advantages, and consequently have been more circumscribed both in their diction and numbers.

"The Greek language was divided into many different dialects. Every petty canton had some peculiar forms of speech which distinguished it from the others. There were, however, four dialectical variations which prevailed over all the other. These were the *Attic*, *Ionian*, *Æolic*, and *Doric*. These four dialectical distinctions originated from the different countries in the east, from which the tribes respectively emigrated. The Attics consisted, 1st, of the barbarous Aborigines; 2d, of an adventitious colony of Egyptian Saites; 3d, of a branch of Ionians from the coast of Palestine. These last formed the old Ionian dialect, from which sprung the Attic and modern Ionic. The Æolians emigrated from a different quarter of the same coast; the inhabitants of which were a remnant of the old Canaanites, and consequently different in dialect from the two first. The Dorians sprang from an unpolished race of purple-fishers on the same coast, and spoke a dialect more rustic than any of the rest. These four nations emigrated from different regions; a circumstance which, in our opinion, laid the foundation of the different dialects by which they were afterwards distinguished.

"In this short sketch we cannot exhibit an exact view of the distinguishing features of each dialect. Such an analysis would carry us far beyond our limits. For satisfaction on this head, we refer the Grecian student to Mattæi's *Grecæ Lingue Dialecti*; and shall only add a few observations.

"The Athenians being an active, brisk, volatile race, delighted in contractions. This style was

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most exquisitely polished. The most celebrated authors who wrote in that dialect were Plato, Thucydides, Xenophon, Demosthenes, and the other orators; Æschylus, Euripides, Sophocles, Aristophanes, Menander, Diphilus, with the other comic and tragic poets. That dialect was either ancient or modern. The ancient Attic was the same with the Ionic.

"The Ionic was the ancient Attic; but when that nation emigrated from Attica and settled on the coast of Asia Minor, they mingled with the Carians and Pelasgi, and of course adopted a number of their vocables. They were an indolent, luxurious, and dissolute people; of course their style was easy and flowing, but verbose, redundant, and without nerves. This, however, is the leading style in Homer; and after him a prodigious number of writers on every subject have used the same dialect, such as Herodotus the celebrated historian; Ctesias the historian of Persia and India; Hecatzus of Miletus, Megasthenes the historian, who lived under Seleucus Nicator; Hippocrates the celebrated physician; Hellenicus the historian, mentioned with honour by Polybius; Anacreon of Teia; Alcæus, Sappho of Lesbos, Pherecydes Syrus the philosopher, and many others of the same profession.

"The Æolic and Doric were originally cognate dialects. When the Dorians invaded Peloponnesus, and settled in that peninsula, they incorporated with the Æolians, and their two dialects blended into one produced the new Doric. The original Dorians inhabited a rugged mountainous region about Ossa and Pindus, and spoke a rough unpolished language similar to the soil which they inhabited. Andrew Schottus, in his observations on poetry, l. 2. cap. 50. proves from an old M. S. of "Theocritus, that there were two dialects of the Doric tongue, the one ancient and the other modern: that this poet employed Ionic and the modern Doric; that the old Doric dialect was rough and cumbrous; but that Theocritus adopted the new as being more soft and mellow." A prodigious number of poets and philosophers wrote in this dialect, such as Epicharmus the poet; Ibycus the poet of Rhegium; Corinna the poetess of Thebes; Erynnæa poetess of Lesbos; Mœchus the poet of Syracuse; Sappho the poetess of Mitylene; Pindar the prince of lyric poets; Archimedes the renowned mathematician; and almost all the Pythagorean philosophers. Few historians wrote in that dialect; or if they did, their works have not fallen into our hands. Most of the hymns sung in the temples of the gods were composed in Doric.

"After the Greek tongue was thoroughly polished, conscious of the superior excellency of their own language, the Greeks, in the pride of their hearts, stigmatized every nation which did not use their language with the contemptuous title of *barbarians*. Such was the delicacy of their pampered ears, that they could not endure the untutored voice of the people whom they called *barbarians*. This extreme delicacy produced 3 very pernicious effects; 1st, it induced them to metamorphose and mangle foreign names, to reduce their sound to the Grecian standard: 2dly, it prevented their learning the languages of the

east, the knowledge of which would have opened to them an avenue to the records, annals, antiquities, laws, customs, &c. of the people of those countries, in comparison of whom the Greeks themselves were of yesterday, and knew nothing. By this unlucky bias, not only they, but even we, who derive all the little knowledge of antiquity we possess through the channel of their writings, have suffered an irreparable injury. By their transformation of oriental names, they have in a manner stopped the channel of communication between the histories of Europe and Asia. This appears evident from Herodotus, Xenophon, Ctesias, and all the other Grecian writers who mention the intercourse between the Greeks and Persians. 3dly, It deprived them of all knowledge of the etymology of their own language. Plato in his *Cratylus* endeavours to investigate the etymology of only a few Greek words. His deductions are childish, and little superior to the random conjectures of a school-boy. Varro, the most learned of all the Romans, has not been more successful. Both stumbled on the very threshold of that useful science; and a scholar of very moderate proficiency in our days knows more of the origin of these two noble languages, than the greatest adepts among the natives did in theirs.

"These imperfections, however, are counterbalanced by numberless excellencies: and we are certainly much more indebted to that incomparable people for the information they have transmitted to us through the medium of their writings, than injured by them in not conveying to us and to themselves more authentic and more ample communications of ancient events." But we need not make encomiums on a language which has long been extolled, perhaps to an extravagant degree, by the labours of men of the most enlarged capacity and the most refined taste. Dr Doig concludes with some learned remarks on the *spiri-rits*, or *aspirates*, and *accents* of the Greek language; for which we must refer the Grecian student to his books and his teacher.

"The Greek student who intends to penetrate into the depths of this excellent language, should also endeavour to be thoroughly acquainted with the books after mentioned. 1. Aristotle's *Rhetoric* and *Poetics*, his book *De Interpretatione*, especially with Ammonius's Commentary. Ammonius was a native of Alexandria, and by far the most acute of all the ancient grammarians. 2. Dion. Halic. *De Structura Orationis*, where, amidst abundance of curious and interesting observations, will be found the true pronunciation of the Greek letters. 3. Demetrius Phalereus *De Elocutione*; a short essay indeed, but replete with instruction concerning the proper arrangement of words and members in sentences. 4. Longinus, the prince of critics, whose remains are above commendation. 5. Theodorus Gaza, and the other refugees from Constantinople, who found an hospitable reception from the munificent family of the Medici, and whose learned labours in their native language once more revived learning and good taste in Europe. These, with some other critics of less celebrity, but equal utility, will unlock all the treasures of Grecian erudition, without how-

ever

ever disclosing the source from which they flowed. To these we might add a few celebrated moderns, such as Monf. Fourmont the Elder, Monf. Gebelin, Abbé Pezron, Salmafius, and especially the learned and industrious Lord Monboddo.

"We shall now give a very brief account of the vast extent of the Greek language even before the Macedonian empire was erected; at which period, indeed, it became in a manner universal, much more than ever the Latin language could accomplish, notwithstanding the vast extent of the Roman empire.

"GREECE, originally Hellas, was a region of small extent, and yet sent out many numerous colonies into different parts of the world. These colonies carried their native language along with them, and industriously diffused it wherever they formed a settlement. The Ionæ, Æolæ, and Doræ, possessed themselves of all the W. and NW. coast of the Lesser Asia and the adjacent islands; and thus even the barbarians learned that polished language. The Greek colonies extended themselves along the S. coast of the Euxine sea, as far as Sinope, now Trebizond, and all the way from the W. coast of Asia Minor; though many cities of barbarians lay between, the Greek tongue was understood and generally spoken by people of rank and fashion.

"There were Greek cities on the N. coast of the Euxine sea to the very eastern point, and perhaps beyond those limits; likewise in the Taurica Cherfoneus, or Crim Tartary; and even to the mouth of the Danube, the straits of Caffa, &c. In the neighbourhood of all these colonies, the Greek language was carefully propagated among the barbarians, who carried on commerce with the Greeks.

"A great part of the south of Italy was planted with Greek cities on both coasts; so that the country was denominated *Magna Græcia*. Here the Greek tongue universally prevailed. In Sicily it was in a manner vernacular. The Ionians had sent a colony into Egypt in the reign of Phammetichus; and a Greek settlement had been formed in Cyrenia many ages before. The Phocians had built Massiia, or *Merjeilles*, as early as the reign of Cyrus the Great, where some remains of the Greek language are still to be discovered. Cæsar tells us, that in the camp of the Helvetii registers were found in Greek letters. Perhaps no language ever had so extensive a spread, where it was not propagated by the law of conquest.

"The Greek tongue, at this day, is confined within very narrow limits. It is spoken in Greece itself, except in Epirus, and the western parts of Macedonia. It is likewise spoken in the Grecian and Asiatic islands in Candia or Crete, in some parts of the coast of Asia Minor, and in Cyprus; but in all these regions, it is much corrupted and degenerated.

"It is next to a miracle (says the Dr) that so many monuments of Grecian literature are still to be found among men. Notwithstanding the burning of the famous library of Alexandria, and the almost numberless wars, massacres, and devastations, which have from time to time in a manner desolated those countries where the Greek language once flourished, we are told

that there still remain about 3000 books written in that language.

"We shall conclude this section with a brief detail of the most distinguished stages and variations through which this noble tongue made its progress, from the age of Homer to the taking of Constantinople, A.D. 1453; a period of more than 2000 years.

"HOMER gave the Greek poetry its colour and consistency, and enriched, as well as harmonized, the language. The Iliad and Odyssey have much of the air of extempore compositions; an epithet is never wanting to fill up a verse; and a set of expressions are mechanically annexed to such ideas as were of frequent recurrence. Hence that copiousness and waste of words in the old Greek bard, which forms such a contrast to the condensed laboured composition of Virgil.

"The Greek prose was of a more difficult structure; and it may be distributed into different styles or degrees of purity. Of the prose authors now extant, the first and best style is that of HERODOTUS and of PLATO, in the florid or mixed kind, of Xenophon in the pure and simple, of Thucydides and Demosthenes in the austere. Nothing, perhaps, is so conducive to form a good taste in composition as the study of all these writers.

"The style of POLYBIUS forms a new epoch in the history of the Greek language: it was the idiomatic or popular manner of expression, especially among military men, in his time, about the 150th Olympiad. It became the mode of succeeding writers, by introducing a simple unadorned expression, and by emancipating them from the anxious labour of the old Greeks respecting the cadence and choice of words. The style of the New Testament, being plain and popular, frequently resembles that of Polybius, as has been shown by Raphaelius, and by Kirchmaier, *de parallelismo*. N. T. et Polybii, 1725.

"Before this historian, the Alexandrian Jews had formed a new or Hellenistic style, resulting from the expression of oriental ideas and idioms in Greek words, after that language had lost as much of its purity as it gained in general use, by the conquests of Alexander. The Hellenistic is the language of the Septuagint, the Apocrypha, the New Testament, and partly of Philo and Josephus. This mixture, in the style of the evangelists and apostles, is one credential of the authenticity of the best of all books, a book which could not have been written but by Jewish authors in the first century. See the fine remarks of Bishop Warburton, *Doctrine of Grace*, book i. ch. 8—10. Critics lose their labour in attempting to adjust the Scripture Greek to the standard of Atticism.

"The diction of the Greek historians, and geographers of the Augustan age, is formed on that of Polybius; but improved and modernized, like the English of the present age, if compared with that of Clarendon or Bacon. More perspicuous than refined, it was well suited to such compilations as were then written by men of letters, such as Dionysius, Diodorus, and Strabo, without much experience or rank in public life.

"The ecclesiastical style was cultivated in the Christian schools of Alexandria, Antioch, and Constantinople; rank and luxuriant, full of oriental idioms, and formed in a great measure on the Septuagint

Septuagint version. Such is, for instance, the style of Eusebius. After him, the best Christian writers polished their compositions in the schools of rhetoric under the later Sophists. Hence the popular and flowing purity of St Chrysostom, who has more good sense than Plato, and perhaps as many good words.

"On the Greek of the Byzantine empire, there is a good dissertation by Du Cange, *de causis corruptæ Græcilitis*, prefixed to his Glossary, together with Portius's Grammar of the modern Greek. This last stage of the Greek language is a miserable picture of Turkish barbarism. And, which is most surprising, there is no city of Greece where the language is more different from the ancient than at Athens. The reason of that is, because it has been long inhabited by a mixed multitude of different nations.

"To conclude, the Greeks have left the most durable monuments of human wisdom, fortitude, magnificence, and ingenuity, in their improvement of every art and science, and in the finest writings upon every subject necessary, profitable, elegant, or entertaining. The Greeks have furnished the brightest examples of every virtue and accomplishment, natural or acquired, political, moral, or military; they excelled in mathematics and philosophy; in all the forms of government, in architecture, navigation, commerce, war: as orators, poets, and historians, they stand as yet unrivalled, and are like to stand so for ever; nor are they less to be admired for the exercises and amusements they invented, and brought to perfection, in the institution of their public games, their theatres, and sports."

SECT. IX. Of the LATIN LANGUAGE.

"This language, (says our author) like every other spoken by barbarians, was in its beginning rough and uncultivated. What people the Romans were, is a point in which antiquarians are not agreed. In their own opinion they were sprung from the Trojans; Dion. Halicarn. derives them from the Greeks; and Plutarch informs us that some imagined they were sprung from the Pelasgi. The fact is, they were a mixture of people collected out of Latium and the adjacent parts, which a variety of accidents had drawn together, to establish themselves on that mountainous region, to secure their own property, and plunder that of their neighbours. They were composed of Arcadians, Sabines, Latins, Etruscans, Umbrians, Oscans, Pelasgi, &c.; and their language must have been a mixture of the different dialects of all these discordant tribes.

"The Latin language ought then to be a mingled mass of the Arcadian, that is, the Æolian Greek, the Pelasgic, Etruscan, and Celtic dialects. These jarring elements, like the people to whom they belonged respectively, gradually incorporated, and produced what was afterwards called the Latin tongue.

"The Arcadians were a Pelasgic tribe, and spoke a dialect of that ancient Greek, early produced by the coalition of this tribe with the savage Aborigines of Greece. This dialect was the ground-work of the Latin. The Æolian Greek, which was strongly tinged with the Pe-

lasgic, was the model upon which the Latin language was formed. From this deduction it appears, that the Latin tongue is much more ancient than the modern Greek; and that the Greek, as it stood before it was thoroughly polished, bore a very near resemblance to that language. Hence we may conclude, that the knowledge of the Latin language is necessary to understand the Greek.

"A very considerable part of the Latin tongue was derived from the Etruscan. That people were the masters of the Romans in every thing sacred. From them they learned the ceremonies of religion, the method of arranging public festivals, the art of divination, the interpretation of omens, the method of lustrations, expiations, &c. It would be easy to prove, that the Pelasgi and Etruscians were the same race of people; and their languages must have differed in dialect only." See *Thucyd.* lib. iv.

"The Umbrian or Celtic enters deeply into the composition of the Latin tongue. For proof of this, we need only appeal to *Pelloutier, Bullet's Memoires de la Langue Celtique, partie I. Abbé Perren's Origin of Ancient Nations, &c.* The Latin abounds with oriental words, especially Hebrew, Chaldean, and Persian. These are certainly remains of the Pelasgic and Etruscan tongues, spoken originally by people who emigrated from regions, where those were parts of the vernacular language. In this language, too, there are not a few Gothic terms. Pelloutier supposes the Celtic and Gothic languages were originally the same. There are, besides, in the Latin, a great number of obsolete Greek words. The most effectual method to distinguish the difference between the early and modern Greek, would be to compare the ancient Latin with the latter; there being very little difference between the ancient Greek and Latin in the earliest periods. It is certain that the Roman letters were the same with the ancient Greek. *Forme literis Latinis quæ veteribus Græcorum*, says Tacitus; and Pliny says the same, and for the truth of his assertion appeals to a monument extant in his own times. These old Greek letters were no other than the Pelasgic, which we have shown from Diod. Sic. to have been prior to the Cadmean. For the figure of these letters, see Askle. Postellus, Montfaucon, *Palæographia Græca*, M. Gebelin, and our *Plate II. Vol. I.*

"That the Latins borrowed the plan of their declensions from the Greeks, is evident from the exact resemblance of the terminations of the cases throughout the three similar declensions. In nouns of the first declension, the resemblance is too palpable to stand in need of illustration. In the ad the Greek genitive is *ov*. In Latin the *o* is thrown out, and the termination becomes *i*. The Latin dative ends in *o*, which is the Greek dative, throwing away *i subscriptum*, which was but faintly founded in that language. No genuine Greek word ended in *u* or *m*. In the termination of flexions, they changed it into *v*. The Latins retained *m*, which had been imported as a terminating letter at an era before the Greek language had undergone its last refinement. Hence the Latin accusative in *um*, instead of the Greek *ov*. The vocative declension was in this case originally like

like the nominative. The Latins have no dual number, because the Æolian dialect, from which they copied, had none. The third declensions in both languages are so exactly parallel, that it would be superfluous to compare them.

"The Latins have no *articles*, which is certainly a defect. The Pelagic, from which they copied, had not adopted that word in the demonstrative sense. Homer indeed seldom uses it; and the probability is, that the more early Greeks used it less frequently. Thus in Latin, when I say, *video hominem*, it is impossible to find out by the bare words whether the word *hominem* intimates a man, or the man; whereas in Greek it would be *Βλέπω άνθρωπον*, I see a man, *Βλέπω τον άνθρωπον*, I see the man. Hence the first expression is indefinite, and the second definite.

"The substantive verb *sum* in Latin, seems to be partly formed from the Greek, and partly not. Some of the persons of the present tense have a near resemblance to the Greek verb *ειμι* or *εμμι*, while others vary widely. The imperfect, præterite, and præterperfect, have nothing common with the Greek verb. The future *ero* was of old *esō*, and is indeed genuine Greek. Upon the whole, the Latin substantive verb more nearly resembles the Persian verb *hesen* than that of any other language we are acquainted with.

"The want of *aorists* or indefinite tenses, seems a palpable defect in the Latin language. The use of these among the Greeks enabled the writer to express the specific variations of time, with more accuracy and precision than the Latins, who never attempted to specify them by any other tenses but the imperfect and pluperfect. Indeed both the Greek and Latin languages were much inferior to the English in this respect." See LANGUAGE, SECT. V. and VI.

"The Latins, in reducing verbs to their four conjugations, formed their inflexions in a very irregular manner. Many verbs of the first class inflect their præterite and supine like those of the second: thus *domo*, instead of giving *avi* and *atum*, has *ui* and *itum*, like *monui* and *monitum*. Not a few verbs of the 3d conjugation have *ivi* and *itum*, as if they belonged to the 4th; e. g. *peto*, *petivi*, *petitum*. Then some verbs have *io* in the present, *ivi* in the præterite, and *itum* in the supine, while, contrary to the rules of analogy, they in reality belong to the third; such are *cupio*, *cupivi*, *cupitum*, *cupere*, &c. Some verbs of the 2d conjugation have their præterite and supine as if they belonged to the third; thus, *jubeo*, *jussi*, *jussum*, *jubere*; *augere*, *auxi*, *auxum*, *augere*. Some verbs which are actually of the 4th conjugation, have their præterite and supine as if they were of the third; thus, *senso*, *senfi*, *sensum*, *sentire*; *haurio*, *hausi*, *hausum*, *haurire*, &c. These are manifest irregularities.

"Another blemish in the Latin tongue is occasioned by its wanting a participle of the præterite tense in the active voice. This defect is perpetually felt, and is the cause of an awkward circumlocution, wherever it happens. Thus, "The general having crossed the river, drew up his army." *Imperator, cum transisset flumen, aciem instruxit*. Here *cum transisset flumen* is a manifest circumlocution, which is at once avoided in the

Greek *ὁ ἡγεμὼν πέρασας τὸν ποταμὸν*, &c. This must always prove an incumbrance in the case of active intransitive verbs. When active deponent verbs occur, it is easily avoided. Thus, "Cæsar having encouraged the soldiers, gave the signal for joining battle;" *Cæsar cohortatus milites, prælii committendi signum dedit*.

"Another palpable defect in this language arises from the want of a *participle of the present* passive. This again must produce an inconveniency upon many occasions, as will be obvious to every Latin student. The two *supines* are universally allowed to be substantive nouns of the 4th declension. How these assumed the nature of verbs it is not easy to determine. When they are placed after verbs or nouns, the matter is attended with no difficulty; but how they should acquire an active signification, and take the case of the verb with which they are connected, implies a stretch of prerogative. The Latin *gerunds* form another unnatural anomaly. Every Latin scholar knows that those words are nothing but the neuters of the participles of the future passive. The fabricators of the Latin tongue, however, elevated them from their primary condition, giving them upon many occasions an active signification.

"Another inconveniency arises from the want of the *present participle* of the verb *sum*. Great inconveniency is derived from the use of the participle *es* in Greek; and indeed it appears surprising that the Latins neglected to introduce the participle *ens* into their language. In this they are singular. Here again a circumlocution becomes necessary in such a case as the following: "The senate being at Rome, passed a decree." Instead of saying *senatus ens Romæ, legem tulit*, we are obliged to say *cum senatus Romæ esset*, &c. If the words *ens* or *existens* had been adopted, as in the Greek, this odious circumlocution would have been avoided. Many other defects of the like kind will occur to every person even in the most approved classical authors.

"If we compare the structure of the Greek and Latin languages, we will quickly be convinced that their characteristic features are extremely different. The genius of the former seems easy and natural; whereas that of the latter, notwithstanding the united efforts of poets, orators, and philosophers, still bears the marks of violence and restraint. To translate Greek into English is no laborious task; the texture of the two languages is so congenial, that the words and phrases, and even the idiomatic expressions, naturally slide into each other. With the Latin the case is quite otherwise; and before elegant English can be produced, one must deviate considerably from the original. Should we attempt to translate a piece of English into Greek, and at the same time into Latin, the translation of the former would be attended with much less difficulty than that of the latter, supposing the translator equally skilled in both languages.

"This incongruity seems to spring from the following cause. Before any man of considerable abilities, either in the capacity of a poet, grammarian, or rhetorician, appeared at Rome, the language had acquired a strong and inflexible tone, too stubborn to be exactly moulded according to the

the Grecian standard. After a language has continued several centuries without receiving a new polish, it becomes like a full grown tree, incapable of being bent to the purposes of the mechanic. Notwithstanding all these obstructions, it arrived at such a pitch of perfection, as to rival, perhaps to excel, all the other European languages, the Greek only excepted. Had men of the taste, judgment, and industry of Ennius, Plautus, Terence, Cicero, and the other worthies of the Augustan age, appeared in the early stages of the Roman commonwealth, their language might have been thoroughly reduced to the Grecian archetype, and the two dialects might have improved each other.

"We have observed that the Latin tongue was a *colluvies* of all the languages spoken by the vagrant people who composed the first elements of that republic. The prevailing dialects were the Pelasgic or Etruscan, and the Celtic, which was the aboriginal tongue of Italy. Hence the primary dialect of the Romans was composed of discordant materials, which never acquired a natural and congenial union. This motley mixture was certainly the original dialect of the Romans. The Pelasgic or Etruscan part of it retained a strong tincture of the oriental style. The Celtic part seems to have been prevalent, since we find that most of the names of places, especially in the middle and northern parts of Italy, are actually of Celtic original. It is therefore clear that the style of the first Romans was composed of the languages above mentioned. Their most celebrated writers upon etymology were Ælius Gallus, Quintus Cornificius, Nonius Marcellus, and Festus. At the head of these is Terentius Varro, whom Cicero styles the most learned of all the Romans. From these writers we are to expect no light. Their etymologies are generally childish and futile.

"Many circumstances concur to make it highly probable that, in the earliest periods of the language, very few inflexions were introduced. 1st, When the Pelasgi left Greece, the Greek language itself was not fully polished. 2^d, The Arcadians were never thoroughly cultivated. They were a rustic pastoral people, and little minded the refinements of a civilized state; consequently the language they brought into Italy at that era must have been of a coarse and irregular texture. From these circumstances, it appears, that the earliest language of the Romans was very little diversified with inflexions. The effect of this was, that the modern Romans did not understand the language of their early progenitors. Polybius, speaking of the earliest treaty between the Romans and Carthaginians, says, "The Roman language has undergone so many changes since that time to the present, that even those who are most deeply skilled in the science of antiquities, cannot understand the words of that treaty but with the greatest difficulty."

"After the Romans became acquainted with the Æolian Greeks, who seized upon both coasts of Italy towards the S. which they called *Magna Græcia*, they began to torture their language into that foreign texture. The most ancient specimen of this kind consists of the remains of the

XII tables. Here every thing is rude and of a clumsy cast; for though by this time considerable progress had been made in refinement, and the language of Rome had begun to appear in a Grecian uniform, still those changes were not natural. Soon after appeared M. Fabius Pictor and Silius; historians often quoted by Livy, but whose works are long since irrecoverably lost. The *Fæti Capitolini* are often mentioned: but they too perished in the burning of the Capitol, during the civil wars between Marius and Sylla. We must therefore leave the Latin tongue during those periods rude and barbarous, and descend to others more characteristically marked.

"In this period we find Ennius, who wrote a Roman history in hexameter verse in 18 books, which he called *Annals*; most part of which is now lost. He likewise translated *Eubemerus de Origine Deorum*; a work often mentioned by the Christian fathers in their disputes with the Pagans, and sometimes quoted by Cicero. Then followed Caius Lucilius the famous satyrist, Accius Valerius, Ædilius, Alpinus, &c. whose fragments were published by the Stephens, Paris, 1764. All these imitated the writers of Greece, or translated from them. By their exertions the spirit of these authors was transfused into the Latin tongue, and its structure accommodated to the Grecian plan.

"Plautus and Terence, by translating the comedies of Menander and Diphilus into their own language, taught the Latin Muses to speak Attic Greek. To speak that language was then the *ton*, as it is now with us to chatter French. Greek tutors were retained in every reputable family; and many Romans of the first rank were equally qualified to speak or write both in Greek and Latin. The original jargon of Latium became obsolete and unintelligible; and Cato himself recommended to learn the Greek language at 80.

"To pretend to enumerate the various inimitable examples of the Augustan or golden age of the Roman tongue, would be a vain task; we shall only quote a few lines from Velleius Paterculus. Having observed, that the Greek authors, who had excelled in literature, had all made their appearance about the same time, he adds, "Not was this circumstance more conspicuous among the Greeks than among the Romans; for the Roman tragedy is confined to Accius and the period when he flourished. The charming wit of Latin elegance was brought to light by Cecilius, Terentius, and Afranius, nearly in the same age. As for our historians, (to add Livy also to the age of the former), if we except Cato, they were all confined to a period of 80 years; so neither has our stock of poets extended to a space much backward or forward. But the energy of the bar, and the finished beauties of prose eloquence, setting aside the same Cato (by leave of P. Crassus, Scipio, Lælius, the Gracchi, Fannius, and Ser. Galba,) broke out all at once under Tully the prince of his profession."

"From this quotation (Mr Dr argues), it appears, that the Romans themselves were convinced of the short duration of the golden age of their language. According to the most judicious critics, it commenced with the era of Cicero's oratorical productions, and terminated with the reign

of Tiberius, or perhaps the middle of his reign. It is generally believed that eloquence, and with it every thing liberal, elevated, and manly, was banished Rome by the despotism of the Cæsars. We imagine that the transition was too instantaneous to have been entirely produced by that unhappy cause. Despotism was firmly established among the Romans about the middle of the reign of Augustus; and yet that period produced such a group of learned men as never adorned any other nation in so short a space of time. The age of Lewis XIV. was the golden period of the French tongue; and that age produced a race of learned men, in every department, superior in number, and equal in genius to the literati who flourished under the noble and envied constitution of Britain during the same age, though the latter is universally allowed to have been the golden period of this country. The British Isles, we hope enjoy still as much liberty as ever; yet we believe few people will aver, that the writers of the present age are equal, either in style or in genius, to that noble group who flourished from the middle of the reign of Charles I. to the middle of the reign of George II.; and here despotism is quite unconcerned.

"In the east the same observation is confirmed. The Persians have long groaned under the Mohammedan yoke, and yet every oriental scholar will allow, that in that country, and under the most galling tyranny, the most amazing productions of taste, genius and industry, that ever dignified human nature, have been exhibited. Under the Arabian caliphs, the successors of Mohammed, appeared writers of a most sublime genius, though never was despotism more cruelly exercised than under those fanatics. The revival of letters at the era of the reformation, was chiefly promoted and cherished by petty despotical princes. We cannot therefore agree that the despotism of the Cæsars banished eloquence and learning from Rome. Longinus indeed has attributed this misfortune to that cause, and tells us, "It is liberty that is formed to nurse the sentiments of great geniuses, to push forward the propensity of contest, to inspire them with hopes, and the generous ambition of being the first in rank." When Longinus wrote this, he did not reflect that he *himself* was a striking instance of the unsoundness of his observation.

"As to science, the fact is undoubtedly on the other side. That Seneca was superior to Cicero in philosophy, cannot be reasonably contradicted. The latter had read, and actually abridged the whole extent of Grecian philosophy: this displayed his reading rather than his learning. The former had addicted himself to the stoic sect; and tho' he does not write with the same flow of eloquence as Tully, he thinks more deeply, and reasons more closely. Pliny's Natural History is a wonderful collection, and contains more useful knowledge than all the writings of the Augustan age condensed into one mass. We think the historical annals of Tacitus, if inferior to Livy in style and majesty of diction, much superior in arrangement and vigour of composition. Quintilian, Pliny the younger, Suetonius, Petronius Arbitr, and Juvenal, deserve high esteem; nor are they inferior

to their immediate predecessors. We think there is good reason to conclude, that the loss of liberty among the Romans did not produce the extinction of eloquence, science, elevation of sentiment, or refinement of taste. There were other circumstances which chiefly contributed to produce that revolution.

"Velleius Paterculus assigns some very judicious reasons for this catastrophe. "Emulation (says he) is the nurse of genius; and one while envy, and another admiration, fires imitation. To be stationary in perfection is a difficult matter; and by analogy, that which cannot go forward goes backward. As at the outset we are animated to overtake those whom we deem before us, so when we despair of being able to overtake or to pass by them, our ardour languishes together with our hope, and what it cannot overtake it ceases to pursue; and leaving the subject as already engrossed by another, it looks out for a *new one* upon which to exert itself."

"This was the case with the Romans. The heroes of the Augustan age had born away the prize of eloquence, history, poetry, &c. Their successors despaired of being able to equal, much less to surpass them, in any of these walks. They were therefore under the necessity of striking out a new path by which they might arrive at eminence. Consequently Seneca introduced the *stile coupé*, as the French call it; that is, a short, sparkling, figurative diction, abounding with antitheses, quaintnesses, witticisms, embellished with flowers, and meretricious ornaments; whereas, the style of the Augustan age was natural, simple, solid, unaffected, and properly adapted to the nature of the subject and the sentiments of the author.

"The historian SALLUST laid the foundation of this unnatural style. Notwithstanding all his excellencies, he every where exhibits an affectation of antiquity, an antithetical cast, an air of austerity, an accuracy, exactness, and regularity. His words, his clauses, seem to be adjusted exactly according to number, weight, and measure, without excess or defect. Paterculus imitated this writer; and succeeded best in those points where his archetype had failed. Tacitus deviated from the Augustan exemplars, and imitated Sallust; but affecting brevity he often falls into obscurity. The other contemporary writers employ a cognate style; and their works are held in less estimation, and bear marks of degeneracy.

"That degeneracy, however, did not spring from the despotical government under which these authors lived, but from that affectation of *singularity* into which they were led by an eager but fruitless desire of signalizing themselves. But the mischief of this rage for *innovation* did not reach their sentiments as it had done their style; for in that point they were so far from falling below the measure of the writers of the former age, that in many instances they seem to have surpassed them.

"With respect to sentiment and mental exertions, Latin authors preserved their vigour, till luxury and effeminacy enervated both the bodies and minds of the Romans. The contagion became universal; and a listlessness, or intellectual torpor, the usual concomitant of luxury, spread indolence

indolence over the mental faculties, which rendered them not only averse to, but even incapable of, industry and perseverance. This lethargic disposition of mind seems to have commenced towards the conclusion of the silver age; that is, about the end of the reign of Adrian. It was then that the Roman eagles began to stoop, and the genius of Rome, as well in arts as in arms, began to decline.

"As the Roman genius, about that period, began to decline, so the style of the silver age was gradually vitiated with barbarisms. The barbarians who flocked to Rome from all parts of the empire; the ambassadors of foreign princes, and often the princes themselves, with their attendants; the prodigious numbers of slaves over all Italy; the frequent commerce between the Roman armies and the barbarians; all concurred to vitiate the Latin tongue. This vitiated character both of style and sentiment became more and more prevalent, from the reign of Adrian to the removal of the imperial seat to Constantinople. Then succeeded the iron age, when the Roman language became absolutely barbarous. Towards the close of the silver, and during the whole of the brazen age, there appeared, however, many writers of no contemptible talents. The most remarkable was SENECA the stoic, the master of Nero." See SENECA.

"About the same time lived PERSIUS the satyrist, the friend and disciple of the stoic Cornutus; to whose precepts, as he did honour by his virtuous life, so his works, though small, show an early proficiency in the science of morals. Under the mild government of Adrian and the Antonines lived Aulus Gellius, an entertaining writer in the miscellaneous way, well skilled in criticism and antiquity. His works contain several valuable fragments of philosophy, which are indeed the most curious part of them.

"In the same age with Aulus Gellius flourished Apuleius of Madaura in Africa; a Platonic writer, whose matter in general far exceeds his perplexed and affected style, too conformable to the false rhetoric of the age when he lived.

"With Aulus Gellius we may range MACROBIUS; not because a contemporary (for he is supposed to have lived under Honorius and Theodosius), but from his near resemblance in the character of a writer. His works, like those of the other, are miscellaneous; filled with mythology and ancient literature, with some philosophy intermixed.

"Boethius was descended from one of the noblest of the Roman families, and was consul in the beginning of the sixth century. He wrote many philosophical works; but his ethic piece on the Consolation of Philosophy deserves great encomiums, both for the matter and the style; in which latter he approaches the purity of a far better age than his own. By command of Theodoric king of the Goths, this great and good man suffered death;" (See BOETHIUS and ITALY, § 7.) "with whom the Latin tongue, and the last remains of the Roman dignity, may be said to have sunk in the western world.

"There were besides a number of poets and historians who flourished during this period; such

as Silius Italicus, Claudian, Aufonius, &c. (See AUSONIUS, CLAUDIAN, ITALICUS, &c. and *Joh. Alberti Fabricii Bibl. Lat.*) There flourished, too, a number of ecclesiastical writers, some of whom deserve great commendation. The chief of these is Lactantius, who has been deservedly dignified with the title of the *Christian Cicero*.

"The Roman authors amount to a very small number in comparison of the Greek. When we consider the extent and duration of the Roman empire, we are justly surprised to find so few writers of character and reputation in so vast a field.

"Upon the whole, the Latin tongue deserves our attention beyond any other ancient one now extant. The grandeur of the people by whom it was spoken; the lustre of its writers; the empire which it still maintains among ourselves; the necessity we are under of learning it, in order to obtain access to almost all the sciences, nay even to the knowledge of our own laws, of our judicial proceedings, of our charters; all these circumstances, and many others too numerous to be detailed, render the acquisition of that imperial language in a peculiar manner improving and interesting. Spoken by the conquerors of the ancient nations, it partakes of all their revolutions, and bears continually their impression. Copious and majestic, when, weary of battles, the Romans vied with the Greeks in science, it became the learned language of Europe, and by its lustre made the jargon of savages disappear. After having controlled by its eloquence, and humanized by its laws, all those people, it became the language of religion. In short, the Latin language will be studied and esteemed as long as good sense and fine taste remain in the world."

SECT. X. Of the CELTIC LANGUAGE.

"The descendants of Japhet having peopled the western parts of Asia, at length entered Europe. Some broke into that quarter of the globe by the N. others crossed the Danube near its mouth. Their posterity gradually ascended towards the source of that river; afterwards they advanced to the banks of the Rhine, which they passed, and thence spread themselves as far as the Alps and the Pyrenean hills. These people were composed of different families; all, however, spoke the same language; their manners and customs bore a near resemblance; there was no variety among them but that difference which climate introduces. They were all known, in the more early times, by the general name of *Celts*, *Scythæ*. In process of time, becoming exceedingly numerous, they were divided into several nations. Those who inhabited that large country bounded by the ocean, the Mediterranean, the Rhine, the Alps, and the Pyrenees, were denominated *Gauls* or *Celts*. These multiplied so prodigiously in a few centuries, that the fertile regions which they then occupied could not afford them the means of subsistence. Some of them passed over into Britain; others crossed the Pyrenees, and formed settlements in the northern parts of Spain. Others made their way into Italy, and colonized those parts which lie at the foot of the mountains; whence they extended themselves towards the centre of that rich country.

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" By this time the Greeks had landed on the E. coast of Italy, and founded numerous colonies. The two nations vying as it were with each other in populousness, and always planting colonies in the course of their progress, at length encountered about the middle of the country. This central region was then called LATIUM. Here the two nations formed one society, called LATINI, i. e. the Latin people. The languages of the two nations were blended; and hence, according to some, the Latin is a mixture of Greek and Gaelic.

" As the Gauls were a brave and numerous people, they maintained themselves in their pristine possessions, uninvaded, unconquered, till their domestic quarrels exposed them as a prey to those Romans whom they had often defeated. Not being addicted to commerce, they had little opportunity to mingle with foreigners. Their language, therefore, must have remained unmixed with foreign idioms. Such as it was when they settled in Gaul, such it must have continued till the Roman conquests. If therefore there is one primitive language now existing, it must be found in the remains of the Gaelic or Celtic. Some very learned men, upon discovering the coincidence of very great numbers of words in some of the Greek dialects with other words in the Celtic, have been inclined to establish a strict affinity between these languages.

" Many learned men have shown, that all the local names in the north of Italy are actually of Celtic extraction. These names generally point out or describe some circumstances relating to the nature of their situation; such as exposure, eminence, lowness, moistness, dryness, coldness, heat, &c. This is a very characteristic feature of an original language; and in the Celtic it is so prominent, that the Erse names of places all over Scotland are, even to this day, peculiarly distinguished by this quality.

" To discover the sources from which the Celtic tongue is derived, we must, 1. Consult the Greek and Latin authors, who have preserved some Gaelic or Celtic terms in their writings. 2. We must have recourse to the Welch and *Basse Bretagne* dialects; in which any new words are easily distinguished from the primitive. 3. We must converse with the country people and peasants, who live at a distance from cities, in those countries where it was once the vernacular tongue. We have been credibly informed, that a Highland gentleman, crossing the Alps for Italy, accidentally fell in with an old woman, a native of those parts, who spoke a language so near akin to his native Erse, that he could understand her with little difficulty; and that she, on the other hand, understood most of his words. 4. The most genuine remains of the Gaelic tongue are to be found in the Highlands of Scotland; the reason is obvious. The Scottish Highlanders are the unmixed unconquered posterity of the ancient Britons, into whose barren domains the Romans never penetrated. Amidst all the revolutions that shook and convulsed Albion, those mountainous regions were left to their primitive lords, who, though hospitable in the extreme, did not suffer strangers to reside long among them. Their lan-

guage, accordingly, remained unmixed, even to this day, especially in the most remote parts and unfrequented islands.

" The Norwegians subdued the western islands of Scotland at a time when the Scottish monarchy was still in its minority. They erected a kind of principality over them, of which the isle of *Man* was the capital; yet we have been informed by the most respectable authority, that there is not at this day a single vocable of the Norse or Danish tongue to be found among those islanders. This fact affords a demonstration of that superstitious attachment with which they were devoted to their vernacular dialects.

" The WELSH dialect cannot, we think, be pure. The *Silures* were conquered by the Romans, to whom they were actually subject for three centuries. During this period, a multitude of Italian exotics must have been transplanted into their language; and indeed many of them are discernible at this day. Their long commerce with their English neighbours and conquerors hath also adulterated their language. The Irish is now spoken by a race of people whose morality and ingenuity are nearly upon a level. Their ancient history being entirely fabulous, we must suspect that the Irish are of Celtic extraction, and that their forefathers emigrated from the W. coast of Britain at a period prior to all historical or traditional annals. Ireland was once the *notive land of faints*. The chief actors on this sacred stage were Romanists. They pretended to improve the language of the natives; and certainly they made it deviate very considerably from the original Celtic.

" Though the Hibernian tongue differs considerably from the original Celtic, some very ingenious essays have been lately published by the learned members of the *Antiquarian Society of Dublin*; in which the coincidence of that tongue with some of the oriental dialects has been supported by very plausible arguments. In a dissertation published in 1772, they have exhibited a collection of *Punico-Maltese* words compared with words of the same import in Irish, where it must be allowed the resemblance is palpable. In the same dissertation they have compared the celebrated *Punic* scene in *Plautus*, with its translation into the Irish; in which the words in the two languages are surprisingly similar. Hence it appears that the Celtic is coeval and congenial with the most ancient languages of the east. The Danes and Norwegians formed settlements in Ireland; and the English have long been sovereigns of that island. These circumstances must have affected the vernacular idioms of the natives; not to mention the necessity of adopting the language of the conquerors, in law, sciences, and religion.

" The inhabitants of the highlands and islands of Scotland are the descendants of those Britons who fled from the power of the Romans, and sheltered themselves among the fens, rocks, and fastnesses of those rugged mountains and sequestered glens. They preferred these wastes and wilds, with liberty and independence, to the fertile valleys of the south, with plenty embittered by slavery. They carried their language along with

with them, a branch of the Celtic. With them fled a number of the druidical priests, who knew their native dialect in all its beauties and varieties. They were sequestered by their situation from the rest of the world; and consequently their language must have remained in the same state in which they received it from their ancestors. They received it genuine *Celtic*, and such they preserved it.

"When the Scots became masters of the low country, and their kings and a great part of the nobility embraced the Saxon manners, and adopted the Saxon language, the genuine Caledonians tenaciously retained their native tongue, dress, manners, clanship, and feudal customs, and could never cordially assimilate with their southern neighbours. Their language, therefore, could not be polluted with words or idioms borrowed from them. Indeed the commerce between them and those of the south, till about 150 years ago, was only transient; nor was their native dialect in the least affected by it.

"Their language, however, did not degenerate, because there existed among them a description of men whose profession obliged them to guard against that misfortune. Every chieftain retained in his family a bard, whose province it was to compose poems in honour of his lord, to commemorate the glorious exploits of his ancestors, to record the genealogy and connections of the family; &c. (See BARD, § 4, 5.) Those poetic geniuses watched over their vernacular dialect with the greatest care and anxiety; because in their compositions no word was to be lost.

"The use of letters was not known among the ancient *Celts*; their druidical clergy forbade the use of them. All their religious rites, their philosophical dogmas, their moral precepts, and their political maxims, were composed in verses which their pupils were obliged to commit to memory. Accordingly letters were unknown to the Caledonian Scots, till they learned them from their southern neighbours or from the Romans. Their bards, therefore, committed every thing to memory; and of course the words of their language must have been faithfully preserved. We find that the celebrated poems of Ossian, (see OSSIAN,) have thus been preserved from father to son for more than 1000 years. The beauty, significance, harmony, variety, and energy of these verses, strike us even in a prose translation.

"The *Gaelic* (says James Grant, Esq. advocate;) is not derived from any other language, being obviously reducible to its own roots. Its combinations are formed of simple words of a known signification; and those words are resolvable into the simplest combinations of vowels and consonants, and even into simple sounds. In such a language we may expect that some traces will be found of the ideas and notions of mankind living in a state of primeval simplicity; and if so, a monument is still preserved of the primitive manners of the Celtic race, while as yet under the guidance of simple nature, without any artificial restraint or controul.

"The sudden sensations of heat and cold; and bodily pain are expressed by articulate sounds, which, however, are not used in this language to denote heat, cold, or bodily pain. A sudden sen-

sation of heat is denoted by an articulate exclamation *hail*; of cold, by *id*; of bodily pain, by *oich*. All these sounds may be called *interjections*, being parts of speech which discover the mind to be seized with some passion. Few of the improved languages of Europe present so great a variety of sounds which instantaneously convey notice of a particular passion, bodily or mental feeling.

"The pronouns *he* and *she* are expressed by the simple sounds *e* and *i*, and these are the marks of the masculine and feminine genders; for a neuter gender is unknown in the *Gaelic*. The compositions of rude and barbarous ages are universally found to approach to the style and numbers of poetry; and this too is a distinguishing character of the *Gaelic*. Bodily subsistence will always be the principal concern of an uncultivated people. Hence *ed* or *eid* is used upon discovery of any animal of prey or game: it is meant to give notice to the hunting companion to be in readiness to seize the animal; and hence we believe *edo* signifies *to eat* in Latin, and *ed* in Irish, signifies *cattle*. These are words importing the simplicity of a primitive state, and are common in the Gaelic idiom. Traces of imitative language remain in all countries. The word used for *cow* in the Gaelic language is *ba*, plainly in imitation of the lowing of that animal.

"In joining together original roots in the progress of improving language and rendering it more copious, its combinations discover an admirable justness and precision of thought, which one would scarce expect to find in an uncultivated dialect. The Gaelic language, in its combination of words, specifies with accuracy the known qualities, and expresses with precision the nature and properties, which were attributed to the object denominated." Of these Dr DOIG gives numerous examples from Mr Grant's *Essays*; but which we omit, as they can only be interesting to those who understand the Gaelic language; of which we have already given a very concise and comprehensive account, under the article *GAELIC*, § 2; from Dr James Robertson's statistical account of Callander; to which we would refer those who wish for farther information respecting this ancient language: who may also consult Pezron's *Origin of Ancient Nations*, *Bullet's Mem. de la Langue Celtique*, Parson's *Rem. of Japhet*, Gibelin's *Monde Prim*, &c.

"When the Celtic language (says Dr Doig) was generally spoken over Europe, it seems to have been amazingly copious. By consulting *Bullet's Memoirs*, it appears that its names for the common and various objects of nature were very numerous. The words denoting water, river, wood, forest, mountain, lake, &c. were most precisely accommodated to specify each modification and variety, with such peculiar exactness as even the Greek, with all its boasted idiomatical precision and copiousness, has not been able to equal. The appearances, which diversify the visible face of inanimate nature, attest the attention of men in an uncultivated state. Unaccustomed to thought and abstract reasoning, their minds expand and exercise their powers upon sensible objects; and of course mark all the *minutiae*; and almost imperceptible distinctions, with an accuracy to us seemingly impossible."

Dr Doig adds, that "the Celtic was one of the dialects of the primitive language; that it once overspread by far the greatest part of Europe; that the Gaelic now spoken in the northern parts of Scotland and the adjacent islands is the *most pure* and *unmixed* relic of that tongue now any where existing. There is lately published an excellent translation of both the Old and New Testaments into Gaelic, which has hitherto been a desideratum among those who speak this language. Such a translation will at once contribute to preserve that ancient tongue, and disseminate the knowledge of the truth among the natives of that country."

On the origin of the name of the people, our author has the following remarks:—"Gaul and Gal, were the two names by which this people was distinguished by the Greeks and Romans. Mr McPherson imagines, that the appellation of *Celt* is an adjective derived from *Gael*, the aboriginal name of the inhabitants of ancient Gaul. But we can see no connection between *Gael* and *Celt*, nor do we think that the latter is an adjective. We believe that those people called themselves *Gael*, and not *Gael*. We are sure that CALEDONIA, or *Cal-don* or *dun*, was an ancient name of the mountainous parts of Scotland.

"Though many different opinions have been advanced with relation to the etymology of this word, we imagine that none is so probable as that which supposes that it is compounded of the two Celtic words *Cal* or *Kal*, that is *Gal* or *Gaul*, and *alun*, which signifies *a bill* or *mountain*. Upon this ground, the Caledonii will import the Gauls of the mountains, or, which is the same, the Highland Gauls: The Irish and Highlanders reciprocally denominate themselves by the general title of *Gael*, *Gael*, or *Gauls*. They also distinguish themselves, as the Welch originally did, and as the Welch distinguish them both at present, by the appellation of *Guidboli*, *Gentheil*, and *Gathel*. The intermediate *th*, they say, is left quiescent in the pronunciation, as it is in many words of the British language; in which case *Gathel* would immediately be formed into *Gael*; and *Gathel* is actually sounded like *Gael* by both the Irish and Highlanders at present. The appellation of *Gathel*, therefore, say they, was originally the same with *Gael*, and the parent of it."

SECT. XI. Of the GOTHIC LANGUAGE.

"THE Celtic and Gothic tongues (says Dr Doig) at one time divided Europe between them. Both were of equal antiquity, both originated in Asia, both were dialects of the original language of mankind. The Celtic, however, was first imported into Europe. The Gauls or Celts had penetrated farthest towards the west; a circumstance which plainly intimates the priority of their arrival.

"The Goths and Getæ were the same race of people, according to Procopius *de bello Goth*; and Strabo informs us, that they spoke the same language with the Thracians, from whose confines they had spread themselves northward as far as the W. banks of the Danube. Yopiscus, in the History of Probus, tells us, that this emperor obliged "the Thracians, and all the Getic tribes, either to surrender or accept of his friendship." This

expression indicates, that the Thracians and the Getic tribes were deemed the same race of people. From this deduction it is clear, that the Getæ and Thracians were brethren; that they spoke the same language: and that their laws, manners, customs, and religious tenets, were the same, might easily be shown.

"The Thracian language, as might be demonstrated from names of persons, offices, places, and customs, among that people, was nearly related to the Chaldean and other oriental languages. They are thought to have been the descendants of Tiras, one of the sons of Japhet, and consequently must have preserved the speech of the Noachic family. The Gothic language abounds with *Pahlavi*, or old Persian words, which are no doubt remains of the primeval dialect of mankind. The Thracians peopled a considerable part of the northern coast of Asia Minor; and consequently we meet with many names of cities, mountains, rivers, &c. in those parts, exactly corresponding with many names in Europe, evidently imposed by our Gothic progenitors. Any person, tolerably acquainted with the remains of the Gothic tongue, will be able to trace these with little difficulty.

"We learn from Herodotus, that Darius in his expedition against the wandering Scythians who lived on the other side of the Ister or Danube, in his progress subdued the Getæ; and he informs us, that these people held the immortality of the human soul, and that they were the bravest and most just of all the Thracians. After this period, we find them mentioned by almost every Greek writer, even familiarly; for Getæ, in the comedies of that nation, is a common name for a slave. The Getæ then occupied all that large tract of country which extended from the confines of Thrace to the banks of the Danube: were a brave and virtuous people: and spoke the same language with the Thracians, with whom they are often confounded both by Greek and Roman historians.

"But the name of *Goths* is by no means so ancient. It was utterly unknown both to the ancient Greeks and Romans. The first time that the name *Goth* is mentioned is in the reign of the Emperor Decius, about A. D. 250, when they burst out of Getia, and rushing like a torrent into the empire, laid waste every thing with fire and sword. The name of their leader or king was *Cniva*. Decius, endeavouring to expel them from Thrace, was vanquished and slain. After this irruption, we find them frequently in the Latin authors under the name of *Getæ* or *Gothi*; though the Greeks generally denominate them *Σκυθæ*. Torfæus tells us, that *get* and *got* is the same word which anciently denoted a *soldier*. *Gat* in Icelandic signifies a *horse* or *horseman*, and *gata*, a *wanderer*. But other derivations are given of the name. See *GOTHS*.

"The original seat of the Goths (says Dr Doig) was the country now called *Little Tartary*, into which they had extended themselves from the frontiers of Thrace. It was called *Little Tartary* by the Greek writers; and it was the station whence those innumerable swarms advanced, which, in conjunction with the Alani and other barbarous tribes, at length over-ran and subverted the western empire. One part of the Gothic

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nation was allowed by Constantine II. to settle in Mœsia. Before the year 420 most of the Gothic nations who had settled within the limits of the Roman empire had been converted to the Christian faith; but, unhappily, the greater part of the apostles by whom they had been profelyted were Arians, which proved fatal to many of the orthodox Christians; for the Arian Goths persecuted them with unrelenting cruelty," and the orthodox were equally cruel to the Arians.

"About A. D. 367, ULPHILAS, bishop of the Mœsian Goths, translated the New Testament into the Gothic language. The remains of this translation furnish a genuine and venerable monument of the ancient Gothic dialect. No more is now extant of that valuable translation than the four Gospels, and a fragment containing part of the Epistle to the Romans. The Gospels have been repeatedly published since the first edition by Junius, in 1665, down to that of Mr Lye. Other fragments of the Gothic language have also been found, which our curious readers may see in Lye's Notes to his Edition of the Gothic Gospels. The fragment of the Epistle to the Romans was lately discovered in the library at Wolfenbützel, and published by Knittel, archdeacon of Wolfenbützel.

"The Goths, prior to the age of Ulpilas, were ignorant of the use of alphabetical characters. The bishop fabricated an alphabet for them, which is a medley of Greek and Roman letters, but rather inclining to the former. This alphabet consists of 25 letters. (See Plate II.) Junius has carefully analyzed these letters, and pointed out their powers and sounds in his Gothic alphabet, prefixed to his *Glossarium Gothicum*. They were long retained in all the European languages derived from the Gothic source. In what respects the Gothic language agrees with the oriental tongues, or differs from them, is not easy to ascertain. We have observed in Sect. VIII. that a considerable part of the Greek language must have been derived from the Thracian; which, according to Strabo, was the same with the Gothic. The Thracian tongue will be found analogous to the Chaldean. The German, which is a genuine descendant of the Gothic, is full of Persian words. The old Persian or Pahlavi appears to be a dialect of the Chaldean. The learned Junius remarks, that a very considerable part of the Gothic language is borrowed from the ancient Greek.

"Both the learned IBER, in his *Glossarium Sui-Gothicum*, and Wachter, in his excellent German and Latin Dictionary, remark the coincidence of Gothic and German words with oriental vocables of the like sound, and of the same signification. In the old Saxon, which is another ramification of the Gothic tongue, numberless terms of the same complexion appear. From this deduction it will follow, that the Gothic tongue, in its original unmixed state as it was spoken by the ancient Getæ, was a dialect of the primeval language; that language which the sons of Tiras brought with them from the plains of Shinar, or Armenia, where the primitive mortals had fixed their residence.

"The Thracian tribes first took possession of those parts of Asia Minor which stretch towards the east. Thence they crossed the Hellespont; and it is universally agreed, that both sides of the Hellespont were peopled with Thracians.

"In Asia Minor we meet with the city Perga, or Perg. In every tongue descended from the Gothic, the word *Berg* signifies a rock, and metaphorically a town or burgh; because towns were originally built on rocks. Hence *Pergamus*, the fort or citadel of Troy. *Beira* in Thracian signified a city; the Chaldaic and Hebrew *Beer* imports a well. In ancient times, especially in the east, it was customary to build cities in the neighbourhood of fountains. The word *trois* seems to be the Gothic *trogh*, *brave*. The words *fader*, *mader*, *aachter*, *bruder*, are so obviously Persian, that every etymologist has assigned them to that language. The Persian *bad* or *bod* signifies a city; the same word in Gothic imports a house, a mansion, an abode. *Band*, in Persian, a strict place; in Gothic, to bend. *Heim*, or *bam*, a house, is of Persian original. Much critical skill has been displayed in tracing the etymology of the Scotch and old English word *Yule*, *Christmas*. *Yule*, derived from *jul*, was a festival in honour of the sun, which was originally celebrated at the winter solstice. *Wick* or *wich* is a Gothic term still preserved in many names of towns; it signifies a *hárröu* corner, or small strip of land jutting into the sea, or into a lake or river; hence the Latin *viculus*, and the Greek *νικος*. In Spanish we have many old Gothic words; among others *bijo*, a son; the same with the Greek *νός*. In some places of Scotland we call any thing that is little, small, *wee*; originally spelt *wi*, from the very same word.

"These few examples we have thrown together, persuaded that almost every word of the language, truly Gothic, may be traced to some oriental root or cognate. Many Gothic nouns end in *a*, like the Chaldaic and Syriac; their substantive verb very much resembles that of the Persian, Greek, and Latin; and their active and auxiliary verb has furnished the common prietperfect tense of Greek verbs in the active voice; that verb is *baban*, but originally *ba*, as the common people pronounce it at this day, especially in the north of Scotland, and among the Swedes, Danes, Norwegians, and Icelanders. We now proceed to inquire what modern tongues are deduced from the Gothic as their stock.

"From Mœsia the Goths spread themselves into Dacia, and from thence into Germany. These countries were situated in such a manner, that the progress of population was forward; and according to the natural course of emigration. From Germany they extended themselves into SCANDINAVIA, that is, Sweden, Denmark, and Norway. Their whole ancient *Edda*, *Sagas*, or *Chronicles*, show that the Goths arrived in Scandinavia by this route, without, however, fixing the era of that event with any tolerable degree of accuracy. By the *Germans*, the ancients understood all the nations E. W. and N. reaching from the Danube on the S. up to the extremity of Scandinavia on the Northern Ocean; and from the Rhine and German Ocean on the W. to the river Chronus or Niemen on the E. All these nations spoke one or other of the Gothic dialects.

"The *Francie* is a dialect of the Teutonic, *Tudesque*, or old German; and the Gospels of Ulpilas bear such a resemblance to the *Francie*, fragments of which are preserved in the early French

French historians, that some learned men have pronounced those Gospels to be part of an old Francic version; but others have refuted this opinion, both from history and comparison of the dialects. Schilter has given us large monuments of the *Tudesque*, or old German, from the 7th century, which prove that the Gothic of Ulphilas is the same language. Wachter's learned Glossary of the ancient German confirms this. The Anglo-Saxon is also a venerable dialect of the *Tudesque*; and is so intimately connected with the Gospels, that some valuable works on this subject are wholly built upon that supposition.

"The *Icelandic* is the oldest relic of the Scandinavian. It begins with Arius Frode in the 11th century, and is a dialect of the German. The remains we have of it are more modern by four centuries than those of the German, and more polished. The *Icelandic* was polished by a long succession of poets, and historians almost equal to those of Greece and Rome. Hence it has less affinity with the parent Gothic. The Swedish is more nearly related to the *Icelandic* than either the Danish or Norwegian. That the Swedish is the daughter of the Gothic, is fully shown by Mr Ibrs above mentioned, in his *Glossarium Sæo-Gothicum*. There is, therefore, no doubt as to the identity of the Gothic, preserved in Ulphilas and other ancient remains, with the German and Scandinavian tongue.

"The modern *German*, a language spoken in a far greater extent than any other of modern Europe, resembles the Gothic Gospels more than the present Danish, Norwegian, or Swedish; and has certainly more ancient *flamina*. Its likeness to the Asiatic tongues, in harshness and inflexible thickness of sound, is very apparent.

BUSSEQUIUS shows, that the clowns of Crim Tartary, remains of the ancient Goths, speak a language almost German. These clowns were no doubt descendants of the ancient Goths, who remained in their native country after the others had emigrated. It is therefore apparent from the whole of this investigation, that the Gothic was introduced into Europe from the East, and is probably a dialect of the language originally spoken by men."

SECT. XII. Of the SCLAVONIAN LANGUAGE.

"THERE is another language which pervades a considerable part of Europe, and, like the Gothic, seems to have originated in the East; the *Sclavonic* or rather *Slavonic*, which prevails far and wide in the east parts of this division of the globe. It is spoken by the Dalmatians, by the inhabitants of the Danubian provinces, by the Poles, Bohemians, and Russians. The word *slab*, that is *slave*, (whence the French word *esclave*, and our word *slave*), signifies *noble*, *illustrious*; but because, in the lower ages of the Roman empire, vast multitudes of these people were spread over all Europe in the quality of slaves, that word came to denote the servile tribe by way of distinction, in the same manner as the words *Geta*, *Davus*, and *Syrus*, did among the Greeks at a more early period.

"The SLAVI dwelt originally on the banks of the Borysthenes, now the Dnieper. They were

a tribe of the European Sarmatians who in ancient times inhabited an immense tract of country, bounded on the W. by the Vistula, now the Weiscl; on the SE. by the Euxine Sea, the Bosphorus Cimmerius, the Palus Mæotis, and the Tanais or Don, which divides Europe from Asia. In this vast tract of country, which at present comprehends Poland, Russia, and a great part of Tartary, there dwelt in ancient times many considerable tribes; among whom were the ROXOLANI, now the RUSSIANS, and the Slavi.

"The Slavi gradually advanced towards the Danube; and, in the reign of Justinian, having passed that river, they made themselves masters of that part of Illyricum which lies between the Drave and the Save, and is to this day from them called *Sclavonia*. These barbarians by degrees over-ran Dalmatia, Liburnia, the western parts of Macedonia, Epirus; and on the east they extended their quarters all along to the west bank of the Danube, where that river falls into the Euxine. In all these countries the Sclavonian was deeply impregnated with the Greek, as the barbarian invaders mingled with the Aborigines, who spoke a corrupt dialect of that language.

"The POLES are the genuine descendants of the ancient SARMATÆ, and speak a dialect of their language, but much adulterated with Latin words, in consequence of the attachment the Poles have long professed to the Roman tongue. The *Silesians* and *Bohemians* have corrupted their dialects in the same manner. In those countries, then, we are not to search for the genuine remains of the ancient Sarmatian.

"The modern RUSSIANS, formerly the *Rboxani* or *Roxolani*, are the posterity of the Sarmatæ, and a branch of the Slavi; they inhabit a part of the country which that people possessed before they fell into the Roman provinces; they speak the same language, and wear the same dress; for on the historical pillar at Constantinople, the Sclavonians are dressed like the Russian boors. If then the Slavi are Sarmatæ, the Russians must of course be the descendants of the same people. They were long a sequestered people, altogether unconnected with the other nations of Europe. They were strangers to commerce, inhospitable to strangers, tenacious of ancient usages, averse to improvements of every kind, wonderfully proud of their imaginary importance; and, in a word, a race of people just one degree above absolute savagism. A people of this character are, for the most part, enemies to innovations; and if we may believe the Russian historians, no nation was ever more averse to innovations than they. From the ninth century, when they embraced Christianity, it does not appear that they moved one step towards civilization, till Peter the Great, only a century ago, in consequence of his despotic authority, compelled them to adopt the manners and customs of their more polished neighbours.

"We may then conclude, that the Russians made as little change in their language during that period, as they did in their dress, habits, and manner of living. Whatever language they spoke in the ninth century, the same they employed at the beginning of the 18th. They were, indeed,

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ording to *Appian. de bel. Mithrid.* once conquered by Diophantus, one of Mithridates's generals; but that conquest was for a moment only: they were likewise invaded, and their country overrun, by Tamerlane; but this invasion was like a current from the mountains, which spreads devastation far and wide while it rages, but makes little alteration on the face of the country.

"Upon some occasions they made incursions upon the Roman empire; but made no permanent settlements. On the whole, we take the Russians have been, with respect to their language, in the same predicament with the Highlanders and Islanders of Scotland, who, according to the general opinion, have preserved the Celtic dialect pure and entire, in consequence of their having never mingled with foreigners.

"From this deduction we may infer two things; first, that the Russian language is the genuine Slavonian; and, secondly, that the latter is the same, or nearly the same, with the ancient Sarmatian. In the Russian, there are found a great number of words resembling the old simple roots of the Greek, both in found and signification; its grammatical genius is nearly the same; and we are informed by the very best authority, that there is in this language a translation of Epictetus, in which there are whole pages, in both original and translation, without one single transposition. M. Leveque, who has published a translation of a history of Russia, is so entirely convinced of the strict analogy between the ancient Greek and the modern Russian, that he is positive that the former is derived from the latter: M. Freret, a very learned French academicien, is clearly of the same opinion. We are, however, persuaded that this opinion is ill founded. We rather imagine, that those coincidences arise from the relics of the primitive language of mankind; vestiges of which are to be found almost in every tongue now existing.

"We have found a very strong resemblance between the Russian and many oriental words, especially Hebrew, Chaldean, and old Persian, of which we could produce several instances. The Sarmatæ were divided into two great nations, the Asiatic and European; the former extended very far eastward, behind the mountain Caucasus, the northern shore of the Euxine Sea, &c. These, we may believe, derived their language from the original tongue long before the Greek language existed. This, in comparison of the Hebrew, Phœnician, Egyptian, Arabian, Chaldean, &c. was but of yesterday. The Greek was a late composition of many different dialects, incorporated with the jargon of the aboriginal Ionian. The Sarmatian, on the contrary, was the tongue of a great and populous nation, civilized long before the Greeks began to emerge from a state of savagism. We are, therefore, by no means disposed to allow, either that the Greek is derived from the Russian, or the Russian from the Greek. We believe there is equal reason for this conclusion, that the Abbé Pezron and M. Gebelin pretend to have discovered, to support their position, that the Greek is derived from the Celtic. Certain it is, that the resemblance among the oriental languages, of which we take the Sarmatian to have been one, is so palpable, that any person of a moderate capacity, who is perfectly master of the one, will find little difficulty in acquiring any of the other. If, therefore, the coincidence between the Greek and Russian should actually exist, we think this circumstance will not authenticate the supposition, that either of the two is derived from the other.

"In the course of this argument, we all along suppose, that the Slavonian, of which we think the Russian is the most genuine remain, is the same with the old Samaritan. We shall now hazard a conjecture with respect to the syntactical coincidence of that language with the Greek. As the Russians were savages, there is no probability that they were acquainted with letters and alphabetical writing, till they acquired that art by intercourse with their neighbours. It is certain, that few nations had made less proficiency in the fine arts; there is little appearance of their having learned this art prior to their conversion to Christianity. Certain it is, that the Slavi, who settled in Dalmatia, Illyria, and Liburnia, had no alphabetical characters till they were furnished with them by St Jerome. The Servian character, which very nearly resembles the Greek, was invented by St Cyril; on which account the language written in that character is denominated *Chirilizza*. These Slavonic tribes knew nothing of alphabetic writing prior to the era of their conversion. The Mexican Goths were in the same condition, till Ulphilas fabricated them a set of letters.

"If the Slavi and Goths, who resided in the neighbourhood of the Greeks and Romans, had not learned alphabetical writing prior to the era of their conversion to Christianity, it must hold *a fortiori*, that the Russians, who lived at a very great distance from those nations, knew nothing of this useful art antecedent to the period of their embracing the Christian faith.

"The Russians pretend that they were converted by St Andrew; but this is a fable. Christianity was first introduced among them in the reign of the grand duke Wolodimir, who, marrying the daughter of the Grecian emperor Basilus, became her convert about A. D. 989. About this period, they were taught the knowledge of letters by the Grecian missionaries, who were employed in teaching them the elements of the Christian doctrines. Their alphabet consists of 31 letters, with a few obsolete additional ones; and these characters resemble those of the Greeks so exactly, that there can be no doubt of their being copied from them; though the shape of some has been somewhat altered. The Russian liturgy was copied from that of the Greek; and the best specimen of the old Russian is the church offices for Easter, in the very words of Chrysostom, who is called, by his name translated, *Zlato uslii, golden-mouthed*.

"As it is impossible that a people so dull and uninventive as the Russians originally were, could ever have fabricated a language so artificially constructed as their present dialect; and it is obvious, that, till Christianity was introduced among them by the Greeks, they could have no correspondence with that people—it must appear surprising how their language came to be fashioned so exactly according to the Greek model. The Russian letters must have been introduced into that country

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by the Greek missionaries. We think it probable, that those apostles, when they taught them a new religion, introduced a change into the idiom of their language. If the savage converts accepted a new religion from those Grecian apostles, they might with equal submission adopt improvements in their language. Such of the natives as were admitted to the sacerdotal function must have learned the Greek language, to qualify them for performing the offices of their religion. Hence the natives, who had been admitted into holy orders, would co-operate with Grecian masters in improving the dialect of the country; which, prior to that period, must have greatly deviated from the original Sarmatian tongue."

After some farther arguments on this subject, Dr Dore draws the following conclusions, which he modestly entitles *conjectures*, and, as such, submits to the learned:—"1. That the Sarmatian was a dialect of the original language of mankind. 2. That the Slavonian was a dialect of the Sarmatian. 3. That the Russe is the most genuine, unsophisticated relic of the Slavonian and Sarmatian. 4. That the Russians had no alphabetic characters prior to the introduction of Christianity in the end of the tenth century. 5. That they were converted by Grecian missionaries. 6. That those missionaries copied their present letters from those of Greece; and, in conjunction with the more enlightened natives, reduced the original unimproved Russe to its present resemblance to the Greek standard."

"The Russian language, (he adds) like most others, contains 2 parts of speech, noun, pronoun, &c. Its nouns have three genders, masculine, feminine, and neuter; it has also a common gender for nouns, intimating both sexes. It has only two numbers, singular and plural. Its cases are 7, nominative, genitive, dative, accusative, vocative, *instrumental*, and *prepositive*. These cases are not formed by varying the termination, as in Greek and Latin; but by placing a vowel after the word, as, we imagine, was the original practice of the Greeks. (See *Sec.* VIII.) Thus, in Russe, *рука* *ruk*,

hand; nom. *рук-а*, *the hand*; gen. *рук-и*, *of the hand*, &c. See *Les Elem. de la Langue Russe, par Charpentier*. Nouns substantive are reduced to four declensions, and adjectives make a fifth. These agree with their substantives in case, gender, and number; they have three degrees of comparison, as in other languages. The comparative is formed from the feminine of the nominative singular of the positive, by changing *a* into *и*, that is, *але* in English; the superlative is made by prefixing *пре*, before the positive. These are the general rules; but there are some exceptions.

The numeral adjectives in Russe have three genders, and are declined. The pronouns have nothing peculiar. Verbs are comprehended under two conjugations. The moods are three; the indicative, imperative, and infinitive: the subjunctive is formed by placing a particle before the indicative. Its tenses are eight in number; the present, the imperfect, the preterite simple, the preterite compound, the pluperfect, the future indefinite, the future simple, the future compound. The verbs have their numbers and persons. Their

other parts of speech differ nothing from those of other languages. Their syntax nearly resembles that of the Greek and Latin. The Russian Grammar of M. Charpentier in French, (Petersburg, 1768), appears to be a very excellent one.

"Towards the era of the subversion of the western empire, the Slavi and Sarmate were so blended and confounded with each other, and with Huns and other Scythian or Tartar emigrants, that the most acute antiquarian would find it impossible to investigate their respective tongues, or even their original residence or extradition. We have selected the Russe as the most genuine branch of the old Slavonian. And we are persuaded that the radical materials of which it is composed have originated in the oriental regions. The word *Tjar*, (which we spell *Cear*), for example, is probably the Phœnician and Chaldean *Sar-or-Zar*, a prince, or grandee. Diodorus Siculus calls the queen of the Massagetae, who, according to Ctesias, cut off Cyrus's head, *Zarina*; which was not many years ago the general title of the empress of all the Russians. Herodotus calls the same prince *Tomyris*, which is nearly the name of the famous *Timor* or *Tamur*, the conqueror of Asia. The former seems to have been the title, and the latter the proper name, of the queen of the Massagetae. In the old Persian or Pahlavi, the word *Gard* signifies "a city;" in Russian, *Gorad* or *Grad* intimates the very same idea; hence *Constantinople* in old Russe is called *Tjargrad* or *Tjargorad*. These are adduced as a specimen only; an able etymologist might, we believe, discover a great number.

"The Slavonian language is spoken in Epirus, the W. part of Macedonia, in Bosnia, Servia, Bulgaria, part of Thrace, Dalmatia, Croatia, Poland, Bohemia, Russia, and Mingrelia in Asia, whence it is frequently used in the seraglio at Constantinople. Many of the great men of Turkey understand it, and use it; and most of the janizaries, having been stationed in garrisons in the Turkish frontiers in Europe, use it as their vulgar tongue. The Hungarians, however, and the natives of Wallachia, speak a different language; and this language bears evident signatures of the Tartarian dialect, which was the tongue of the original Huns. Upon the whole, the Slavonian is by much the most extensive language in Europe, and extends far into Asia."

SECT. XIII. Of the MODERN LANGUAGES.

Dr Dore remarks, that "if we call all the different dialects of the various nations that now inhabit the known earth, languages, the number is truly great; and vain would be his ambition who should attempt to learn them, though but imperfectly. There are four, which may be called *original* or *mother* languages, and which seem to have given birth to all that are now spoken in Europe. These are the *Latin*, *Celtic*, *Gothic*, and *Slavonian*. Not that we believe them to have come down to us, without alteration, from the confusion of tongues at the tower of Babel. We have repeatedly declared our opinion, that there is but one truly original language, from which all others are derivatives variously modified. These four languages are original, only as being the immediate parents of those now spoken in EUROPE.

1. i. FROM

- i. From the LATIN came, 1. The *Portuguese*. 2. *Spanish*. 3. *French*. 4. *Italian*.
 ii. From the CELTIC; 5. The *Erse*, or *Gaelic* of the Highlands of Scotland. 6. *Welsh*. 7. *Irish*. 8. *Basse-Bretagne*.
 iii. From the GOTHIC; 9. The *German*. 10. *Low Saxon* or *Low German*. 11. *Dutch*. 12. *English*; in which almost all the nouns substantive are German, and many of the verbs French, Latin, &c. and which is enriched with the spoils of all other languages. 13. *Danish*. 14. *Norwegian*. 15. *Swedish*. 16. *Icelandic*.
 iv. From the SLAVONIAN; 17. The *Polonese*. 18. *Lithuanian*. 19. *Bohemian*. 20. *Transylvanian*. 21. *Moravian*. 22. The modern *Vandalian*, as it is still spoken in Lusatia, Prussian Vandalia, &c. 23. *Croatian*. 24. *Russian* or *Muscovite*; which, as we have seen, is the purest dialect of this language.
 25. The language of the *Calmucs* and *Cossacs*.
 26. Thirty-two different dialects of nations who inhabit the NE. parts of Europe and Asia, and who are defended from the Tartars and Hunno-Scythians. There are polyglot tables which contain not only the alphabets, but also the principal distinct characters of all these languages.

"II. The languages at present generally spoken in ASIA are,

27. The *Turkish* and *Tartarian*, with their different dialects. 28. The *Persian*; 29. *Georgian* or *Iberian*; 30. *Albanian* or *Circassian*; 31. The *Armenian*; These 4 languages are spoken by the Greek Christians in Asia, under the patriarch of Constantinople. 32. The modern *Indian*. 33. The *Pormosan*. 34. *Indo-Spanic*. 35. *Malabarian*. 36. *Warangan*, and 37. The *Talmulic* or *Damulic*. The Danish missionaries who go to Tranquebar, print books at Hall in these 5 languages. 38. The modern *Arabic*. 39. *Tanzanian*. 40. *Mungalic*.
 41. The language of the *Nigarian* or *Acar Nigarian*.
 42. The *Grufnic* or *Grufnian*.
 43. The *Chinefe*.
 44. The *Japaneze*.

"We have enumerated here those Asiatic languages only of which we have some knowledge in Europe, and even alphabets, grammars, or other books that can give us information concerning them. There are doubtless other tongues and dialects in those vast regions and adjacent islands; but of these we are not able to give any account.

- "III. The principal languages of AFRICA are,
 45. The modern *Egyptian*. 46. The *Abbyssinian*. 47. The *Pretitic*, or the language of Fetu. 48. The *Moroccan*; and,
 49. The jargons of those savage nations who inhabit the desert and burning regions. 50. The people on the coast of *Barbary* speak a corrupt dialect of the Arabic. 51. The *Chilic* language, otherwise called *Tamazeght*. 52. The *Negritian*; 53. That of *Guinea*; and 54. The language of the *Hottentots*.

"IV. The language of the native AMERICAN nations are but little known in Europe. Every one of these, though distant but a few days journey from each other, have their particular language or jargon. The language of the Mexicans and Peruvians seems to be the most regular and

polished. There is also one called *Poconchi* or *Pocomana*, that is used in the bay of Honduras and toward Guntimal, the words and rules of which are most known to us. The languages of North America are in general the Algonhic, Apalabian, Mohogic, Savanahamic, Virginic, and Mexican; and in South America, the Peruvian, Caribic, the Tucumanian, and the languages used in Paraguay, Brasil, and Guiana.

"V. It would be a vain undertaking for a man of letters to attempt the study of all these languages; but it would be still more absurd to attempt an analysis of them. Some general reflections therefore must suffice. Among the modern languages of Europe, the FRENCH seems to merit great attention; as it is elegant and pleasing in itself; as it is become so general, that with it we may travel from one end of Europe to the other, without scarce having any occasion for an interpreter; and as in it are to be found excellent works of every kind, both in verse and prose, useful and agreeable. There are, besides, grammars and dictionaries of this language which give us every information concerning it, and very able masters who teach it; especially such as come from those parts of France where it is spoken correctly; for with all its advantages, the French language has this inconvenience, that it is pronounced scarce any where purely but at Paris, and on the banks of the Loire. The language of the court, of the great world, and of men of letters, is very different from that of the common people; and the French tongue, in general, is subject to great alteration. What pity it is, that the style of the great CORNEILLE and MOLIÈRE, should already begin to be obsolete, and that it will be but a little time before the inimitable *chefs d'œuvres* of those men of sublime genius will be no longer seen on the stage! The most modern style of the French, however does not seem to be the best. Too much conciseness, the epigrammatic point, the antithesis, the paradox, the sententious expression, &c. diminish its force; and, by becoming more polished and refined, it loses much of its energy.

"VI. The GERMAN and ITALIAN languages merit likewise a particular application; as does the English, perhaps above all, for its many and great excellencies. (See LANGUAGE, SECT. V. VI.) Authors of great ability daily labour in improving them; and what language would not become excellent, were men of exalted talents to make constant use of it in their works?

"VII. The other languages of Europe have each their beauties and excellencies. But the greatest difficulty in all living languages constantly consists in the pronunciation, which it is scarce possible for any one to attain, unless he be born or educated in the country where it is spoken: and this is the only article for which a master is necessary, as it cannot be learned but by teaching or by conversation: all the rest may be acquired by a good grammar and other books. In all languages whatever, the poetic style is more difficult than the prosaic: in every language we should endeavour to enrich our memories with great store of words, and to have them ready to produce on all occasions: in all languages it is difficult to extend our knowledge so far as to be able to form a critical

judgment of them. All living languages are pronounced rapidly, and without dwelling on the long syllables; almost all of them have articles which distinguish the genders.

"VIII. Those languages that are derived from the Latin have this further advantage, that they adopt without restraint, and without offending the

ear, Latin and Greek words and expressions, and which by the aid of a new termination appear to be natives of the language. This privilege is forbidden the Germans, who in their best translations dare not use any foreign word, unless it be some technical term in case of great necessity." *Enc. Brit.*

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PHILOMATHES, a lover of learning or science.

PHILOMBROTUS, an archon of Athens, during whose government, the republic being distracted by factions, the regulation of the state was entrusted to Solon, who, by his wisdom and integrity, brought the citizens to a right understanding. *Pult. in Solon.*

PHILOMEDES. See PHILOMELUS;

(1.) PHILOMEL. } *n. f.* [from *Philomela*,

(2.) PHILOMELA. } changed into a bird.]
The nightingale.

When rivers rage, and rocks grow cold,
And *philomel* becometh dumb. *Shak.*

Hears the hawk, when *philomela* sings? *Pope.*

(2.) PHILOMELA, in fabulous history, a daughter of Pandion king of Athens, and sister to Procne, who had married Tereus king of Thrace. Procne, being much attached to Philomela, became melancholy till she prevailed upon her husband to go to Athens and bring her sister to Thrace. Tereus obeyed, but had no sooner obtained Pandion's permission to conduct Philomela to Thrace, than he fell in love with her. He dismissed the guards, offered violence to Philomela, and cut out her tongue, that she might not discover his barbarity, and villainy. He then confined her in a lonely castle; and returning to Thrace, told Procne that Philomela had died by the way. On this Procne put on mourning for Philomela; but a year had scarcely elapsed before she was informed that her sister was not dead. Philomela described on a piece of tapestry her misfortunes and the brutality of Tereus, and privately conveyed it to Procne. She hastened to deliver her sister from her confinement, and concerted with her measures for punishing Tereus. She murdered her son Itylus, then in the sixth year of his age, and served him up as food before her husband during the festival of Bacchus. Tereus, in the midst of his repast, called for Itylus; when Procne informed him that he was then feasting on his flesh, and Philomela throwing on the table the head of Itylus, convinced him of the cruelty of the scene. He drew his sword to punish the parricidal sisters, but was instantly changed into a hoopoe, Philomela into a nightingale, Procne into a swallow, and Itylus into a pheasant. This tragedy happened at Daulis in Phocis; but Rantamas and Strabo, who mention the story, are silent about the transformation; and the former observes that Tereus, after this bloody repast, fled to Megara, where he killed himself. The inhabitants raised a monument to his memory, where they offered yearly sacrifices, and placed pebbles instead of barley. On this monument the hoopoes were first observed. Procne and Philomela died through excess of grief; and as the voices of the nightingale and swallow are

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peculiarly mournful, the poets embellished the fable by the supposed metamorphoses.

PHILOMELUM, a town of Phrygia. *Cicero.*

PHILOMELUS, or, as Plutarch calls him PHILOMEDES, a general of Phocis, who plundered the temple of Apollo, at Delphi. See PHOCIS. He died A. A. C. 354.

* PHILOMOT. *adj.* Corrupted from *seuile morte*, a dead leaf. Coloured like a dead leaf—One of them was blue, another yellow, and another *philomot*. *Addison.*

PHILONIUM, in pharmacy, a kind of somniferous anodyne opiate, taking its name from Philo the inventor.

To PHILOMIZE, *v. n.* [*philomize*, Lat.] To imitate the style and sentiments of Philo. This verb, and its companion, To PLATONIZE, owe their derivation and existence to the circumstance of Philo, the Alexandrian Jewish philosopher, having imbibed the philosophical principles of Plato so thoroughly, and imitated his manner so closely, that in reading Philo's works it became a proverbial saying, "*Aut Plato Philonizat, aut Philo Platonizat*," i. e. "Either Plato Philonizes or Philo Platonizes." See PHILO, N° 1.

PHILONUS, a village of Egypt. *Strabo.*

PHILOPATER, a surname of the 4th Ptolemy. See EGYPT, § 12; and PTOLEMY.

PHILOPEMEN, a celebrated general of the Achaean league, born in Megalopolis, in Peloponnesus. He was no sooner able to bear arms, than he entered among the troops which Megalopolis sent against Laconia. When Cleomenes III. king of Sparta attacked Megalopolis, Philopemen displayed much courage. He signalized himself no less in the battle of Sellasia, where Antigonus defeated Cleomenes. Antigonus made very advantageous offers to gain him over to his interest; but he rejected them. He went to Crete, then engaged in war, and served several years as a volunteer, till he acquired a complete knowledge of the military art. On his return home, he was appointed general of the horse; in which command he behaved so well, that the Achaean horse became famous all over Greece. He was soon after appointed general of all the Achaean forces, when he applied himself to re-establish military discipline among the troops of the republic, which he found in a very low condition. He made great improvements in the Achaean discipline; and had for 8 months exercised his troops daily, when news was brought him, that Machanidas was advancing, at the head of a numerous army, to invade Achaia. He accordingly, taking the field, met the enemy in the territories of Mantinea, where a battle was fought, in which he completely routed the Lacedaemonians, and killed their leader with his own hand: this

this happened about A. A. C. 404. But what most of all raised the fame and reputation of Philopœmen was his joining the powerful state of Lacedæmon to the Achæan commonwealth; by which means the Achæans came to eclipse all the other states of Greece. This memorable event happened in the year 191. The Lacedæmonians, overjoyed to see themselves delivered from the oppression they had long groaned under, ordered the palace and furniture of their tyrant Nabis to be sold; (See NABIS,) and the sum accruing from thence, to the amount of 120 talents, to be presented to Philopœmen, as a token of their gratitude. On this occasion, so great was the opinion which the Spartans had of his disinterestedness, that no one could be found who would take upon him to offer the present, until Timolaus was compelled by a decree. The money however he rejected, declaring he would always be their friend without expense. About two years after this, the city of Messene withdrew itself from the Achæan league. Philopœmen attacked them; but was wounded, fell from his horse, was taken prisoner, and poisoned by Dinocrates, the Messenian general, in his 70th year, A. A. C. 183. Philopœmen drank the cup with pleasure, when he heard from the jailer that his countrymen were victors. The Achæans, to revenge his murder, marched up to Messene, where Dinocrates to avoid their vengeance killed himself. The rest, concerned in his murder, were sacrificed on his tomb, and annual sacrifices were held to his memory by the Megalopolitans. To the valour and prudence of Philopœmen, Achaia owed her glory, which upon his death declined; whence Philopœmen was called *the last of the Greeks*, as Brutus was afterwards styled *the last of the Romans*.

PHILOFONUS, John, a learned grammarian and philologist of the 7th century, born in Alexandria. He was of so studious a disposition, that he was styled *the Lover of Labour*. He published many of Aristotle's tracts, with learned commentaries.

* PHILOSOPHEME. *n. f.* [*philosophema*.] Principle of reasoning; theorem. An unusual word. — You will learn how to address yourself to children for their benefit, and derive some useful *philosophemes* for your own entertainment. *Watts*.

(1.) * PHILOSOPHER. *n. f.* [*philosophus*, Lat. *philosophes*, Fr.] A man deep in knowledge, either moral or natural. — Many found in-belièf have been also great *philosophers*. *Hooker*. — The *philosopher* hath long ago told us, that according to the divers nature of things, so must the evidences for them be. *Wilkins*. —

They all our fam'd *philosophers* despise. *Dryden*. — If the *philosophers* by fire, had been so wary in their observations and sincere in their reports, as those, who call themselves *philosophers*, ought to have been, our acquaintance with the bodies here about us had been yet much greater. *Locke*. — Adam, in the state of innocence, came into the world a *philosopher*. *South*.

(2.) * PHILOSOPHER'S STONE. *n. f.* A stone dreamed of by alchemists, which, by its touch, converts base metals into gold. —

That stone

Philosophers in vain so long have sought; *Milton*.

(3.) THE PHILOSOPHER'S STONE was the great-

est object of alchemy, a long sought for preparation, which, when found, was expected to convert all the true mercurial part of metal into pure gold, better than any that is dug out of mines, or perfected by the refiner's art. Some Greek writers in the 4th and 5th centuries speak of this art as being *then known*; and towards the end of the 13th century, when the learning of the East had been brought hither by the Arabians, the same pretensions began to spread through Europe. See ALCHEMY, CHEMISTRY Index; and TRANSMUTATION. Alchemists attempted to arrive at the making of gold by three methods: the first by separation; for every metal yet known, it is affirmed, contains some quantity of gold; only, in most, the quantity is so little as not to defray the expense of getting it out. The 2d by maturation; for the alchemists think mercury is the base and matter of all metals; that quicksilver purged from all heterogeneous bodies would be much heavier, denser, and simpler, than the native quicksilver; and that by subtilizing, purifying, and digesting it with much labour, and long operations, it is possible to convert it into pure gold. The 3d method is by transmutation, or by turning all metals readily into pure gold, by melting them in the fire, and casting a little quantity of a certain preparation into the fused matter; upon which the feces retire, are volatilized and burnt, and carried off; and all the rest of the mass is turned into pure gold. That which works this change in the metals is called the *philosopher's stone*. This they suppose to be a most subtle, fixed; concentrated fire, which, as soon as it meets with any metal, does, by a magnetic virtue, immediately unite itself to the mercurial body of the metal, volatilize and cleanse off all that is impure therein, and leave nothing but a mass of pure gold. Whether this method be possible or not, it is difficult to say, though we are fully persuaded of the negative. Yet we have so many testimonies of the affirmative, from persons who on all other occasions speak truth, that it is hard to say they are guilty of direct falsehood, even when they say that they have been masters of the secret. We are told, that it is only doing that by art which nature does in many years and ages. This pretended secret, known afterwards by the name of the *philosopher's stone* or *powder* was encouraged by four licenses, granted to different projectors during the reign of Henry VI, and in succeeding times was patronized all over Europe.

(1.) * PHILOSOPHICAL. PHILOSOPHICK. *adj.* [*philosophicus*, Fr. from *philosophy*.] 1. Belonging to philosophy; suitable to a philosopher; formed by philosophy. —

The stoick last in *philosophick* pride,
By him call'd virtue. *Milton*.

How could our chymick friends go on

To find the *philosophick* stone? *Prior*.

— When the safety of the publick is endangered, the appearance of a *philosophical* or affected indolence must arise either from stupidity or perfidiousness. *Addison*. 2. Skilled in philosophy. — We have our *philosophical* persons to make modern and familiar things supernatural and causeless. *Shak*. — Acquaintance with God is not a speculative knowledge, built on abstracted reasonings about his nature and essence, such as *philosophical* minds

minds often busy themselves in. *Atterbury*. 3. Frugal;

But since among mankind so few there are,

Who will conform to philosophick fare,

I'll mingle something.

Dryden.

(2.) PHILOSOPHICAL EGG, among chemists, a thin glass body or bubble, of the shape of an egg, with a long neck or stem, used in digestions.

* PHILOSOPHICALLY. *adv.* [from *philosophical*.] In a philosophical manner; rationally; wisely.—The law of commonweales that cut off the right hand of malefactors, if *philosophically* executed, is impartial. *Brown*.—No man has ever treated the passion of love with so much delicacy, or searched into the nature of it more *philosophically*, than Ovid. *Dryden*.—If natural laws were once settled, they are never to be reversed; to violate and infringe them, is the same as what we call miracle, and doth not found very *philosophically* out of the mouth of an atheist. *Bentley*.

PHILOSOPHIST. *n. f.* a lover of sophistry or

false reasoning, in contradistinction to PHILOSOPHER, who is a lover of true science, sound reasoning, and practical wisdom.

* To PHILOSOPHIZE. *v. a.* [from *philosophy*.] To play the philosopher; to reason like a philosopher; to moralize; to search into nature; to enquire into the causes of effects. We must not *philosophize* beyond sympathy and antipathy. *Glanville*.—The wax *philosophized* upon the matter, and finding out at last that it was burning made the brick too hard, cast itself into the fire. *L'Esrange*.—Two doctors of the schools were *philosophizing* upon the advantages of mankind above all other creatures. *L'Esrange*.—Some of our *philosophizing* divines have too much exalted the faculties of our souls, when they have maintained, that by their force mankind has been able to find out God. *Dryden*.

PHILOSOPHIZING, RULES OF. See NEWTONIAN PHILOSOPHY, *SECT. VI*; and the following article.

P H I L O S O P H Y.

ETYMOLOGY, DEFINITIONS, and OBJECTS of PHILOSOPHY.

PHILOSOPHY is thus defined and illustrated by Dr JOHNSON:

* PHILOSOPHY. *n. f.* [*philosophie*, Fr. *philosophia*, Latin.] 1. Knowledge natural or moral.—I had never any taste of *philosophy*, nor inward feeling in myself, which for a while I did not call to my succour. *Sidney*.—

Hang up *philosophy*;

Unless *philosophy* can make a Juliet,

Displant a town, reverse a prince's doom,

It helps not.

Shak.

—The progress you have made in *philosophy* hath enabled you to benefit yourself with what I have written. *Digby*. 2. Hypothesis or system upon which natural effects are explained.—We shall in vain interpret their words by the notions of our *philosophy*, and the doctrines in our schools. *Locke*. 3. Reasoning; argumentation.—

Of good and evil much they argu'd then,

Vain wisdom all and false *philosophy*.

Milton.

—His decisions are the judgment of his passions, not of his reason; the *philosophy* of the sinner, not of the man. *Rogers*. 4. The course of sciences read in the schools.

PHILOSOPHY is derived from *philos* to love, and *sophia*, wisdom, and literally signifies the love of wisdom. In its usual acceptation, however, it denotes a science, or collection of sciences, of which the universe is the object; and of the term thus employed, many definitions have been given. By Pythagoras, philosophy is defined *scientia rerum*, "the knowledge of things existing; by Cicero, after Plato, *scientia rerum divinarum et humanarum cum causis*; and by the illustrious Bacon, *interpretatio nature*.

According to M. CHAUVIN, the term is derived from *philos*, desire or study, and *sophia*, wisdom; and therefore he understands the word to mean the desire or study of wisdom; for (says he) Pythagoras, conceiving that the application of the human mind

ought rather to be called *study* than *science*, set aside the appellation of *wise* as too assuming, and took that of *philosopher*. Whether any of these definitions be sufficiently precise, and at the same time sufficiently comprehensive, may be questioned; but if philosophy, in its utmost extent, be capable of being adequately defined, it is not here that the definition would be given. "Explanation (says an acute writer), is the first office of a teacher; definition, if it be good, is the last of the inquirer after truth; but explanation is one thing, and definition quite another."

The principal objects of philosophy are, God, nature, and man. That part of it which treats of God, is called *theology*; that which treats of nature, *physics* and *metaphysics*; and that which treats of man, *logic* and *ethics*.

P A R T I.

OF PHILOSOPHY IN GENERAL.

IN the present Treatise on this comprehensive science, we mean only to give, 1st, A view of philosophy in general: and, 2dly, A brief view of experimental Philosophy. In doing this, but particularly in the first Part, we shall chiefly follow the plan laid down by the ingenious and learned Prof. ROBERTSON of Edin. and the Rev. Dr GLEIG of Stirling, whose excellent treatise we shall use the freedom to quote.

SECT. I. HISTORY of PHILOSOPHY.

The first people among whom philosophy was cultivated, was probably the CHALDEANS. Of the Chaldean philosophy much has been said, but very little is known. Astronomy seems to have been their favourite study; and notwithstanding their extravagant assertions of the antiquity of that science, which they pretend their ancestors had continued thro' a period of 470,000 years, yet CALLISTHENES, upon the most minute inquiry, which he made at the desire of ARISTOTLE, found, that their observations reached no further

farther back than 1903 years, or A. A. C. 2234. Even this is a more early period than PTOLEMY allows their science, for he mentions no Chaldean observations prior to the era of Nabonassar, or 747 years before Christ. That they cultivated something which they called *philosophy*, at a much earlier period than this, cannot be questioned; for ARISTOTLE, on the credit of the most ancient records, speaks of the Chaldean magi as prior to the Egyptian priests, who were certainly men of learning, before the time of Moses. For any other science than that of the stars, we do not read that the Chaldeans were famous; and this seems to have been cultivated by them merely as the foundation of judicial ASTROLOGY. If any credit be due to Plutarch and Vitruvius, who quote Berosus, (see Berosus,) it was the opinion of the Chaldean wise men, that an eclipse of the moon happens when that part of its body which is destitute of fire is turned towards the earth. "Their cosmogony, as given by Berosus, and preserved by Syncellus, seems to be this, that all things in the beginning, consisted of darkness and water; that a divine power, dividing this humid mass, formed the world; and that the human mind is an emanation from the Divine nature.

"What particular people made the earliest figure after the Chaldeans, in the history of philosophy, cannot be certainly known. The claims of the EGYPTIANS is probably best founded; but as their science was the immediate source of that of the Greeks, we shall defer what we have to say of it, and turn our attention from Chaldean to Indian philosophy, as it had been cultivated from a very early period, by the Brachmans and Gymnosophists. We pass over Persia, because we know not of any science peculiar to that kingdom, except the doctrines of the magi, which were religious rather than philosophical; and of them the reader will find some account under the words MAGI, POETHISM, and ZOROASTER.

We are certain that the Indian philosophers from whatever quarter they received their philosophy, were held in high repute at a period of very remote antiquity, since they were visited by PYTHAGORAS and other sages of ancient Greece, who travelled in pursuit of knowledge. Yet they seem to have been in that early age, as well as at present, more distinguished for the severity of their manners than for the acquisition of science. The philosophy of the Indians has indeed from the beginning been engrafted on their religious dogmas, and seems to be a compound of fanatic metaphysics, and extravagant superstition, without the smallest seasoning of natural philosophy.

The PUNDITS or PANDITS of Indostan, who are the most learned of the BRAMINS, allow no powers whatever to matter, but introduce the Supreme Being as the immediate cause of every effect, however trivial. "Brehm, the Spirit of God, (says one of their most reverend BRAMINS), is absorbed in self-contemplation. (See BRAMA.) The same is the mighty Lord, who is present in

every part of space, whose omnipresence, as expressed in the *Reig-Beid* or *RIGVEDA*, I shall now explain. Brehm is one, and to him there is no second; such is truly Brehm. His omniscience is self-inspired or self-intelligent, and its comprehension includes every possible species. To illustrate this as far as I am able; the most comprehensive of all comprehensive faculties is omniscience; and being self-inspired, it is subject to none of the accidents of mortality, conception; birth, growth, decay, or death; neither is it subject to passion or vice. To it the three distinctions of time, *past, present, and future*, are not. To it the three modes of being, *ate not*. (To be awake, to sleep, and to be unconscious.) It is separated from the universe, and independent of all. This omniscience is named *Brehm*. By this omniscient Spirit the operations of God are enlivened. By this Spirit also the 24 powers of nature are animated. How is this? As the eye by the sun, as the pot by the fire, as iron by the magnet, as variety of imitations by the mimic, as fire by the fuel, as the shadow by the man, as dust by the wind, as the arrow by the spring of the bow, and as the shade by the tree; so by this Spirit the world is endued with the powers of intellect, the powers of the will, and the powers of action: so that if it emanates from the heart by the channel of the ear, it causes the perception of sounds; if it emanates from the heart by the channel of the skin, it causes the perception of touch; if it emanates from the heart by the channel of the eye, it causes the perception of visible objects; if it emanates from the heart by the channel of the tongue, it causes the perception of taste; if it emanates from the heart by the channel of the nose, it causes the perception of smell. This also invigorating the five members of action, the five members of perception, the five elements, the five senses, and the three dispositions of the mind, &c. causes the creation or the annihilation of the universe, while it itself beholds every thing as an indifferent spectator."

From this quotation, it is plain that all the motions in the universe, and all the perceptions of man, are, according to the Bramins, caused by the immediate agency of the Spirit of God, which seems to be here considered as the soul of the world. But it appears from some papers in the *Asiatic Researches*, that the most profound of these oriental philosophers, and even the authors of their sacred books, believe not in the existence of matter as a separate substance. Sir W. JONES says they hold an opinion respecting it, similar to that of the celebrated Berkeley.

We have shown elsewhere, (See *METEMPSYCHOSIS*), that the metaphysical doctrines of the Bramins respecting the human soul differ not from those of PYTHAGORAS and PLATO; and that they believe it to be an emanation from the great soul of the world, which, after many transmigrations, will be finally absorbed in its parent substance. From the Bramins believing in the soul

† The 24 powers of nature, according to the Bramins, are the five elements, fire, air, earth, water, and akash (a kind of subtile ether); the five members of action, the hand, foot, tongue, anus, and male organ of generation; the five organs of perception, the ear, eye, nose, mouth, and skin; the five senses, which they distinguish from the organs of sensation; the three dispositions of the mind, desire, passion, and tranquillity; and the power of consciousness.

soul of the world, not only as the *sole agent*, but as the *immediate* cause of every motion in nature, we can hardly suppose them to have made any great progress in that science, which in Europe is cultivated under the name of *PHYSICS*. They have no inducement to investigate the laws of nature; because, according to the first principles of their philosophy, which, together with their religion, they believe to have been revealed from heaven, every phenomenon; however regular, or however anomalous, is produced by the voluntary act of an intelligent mind. Yet if they were acquainted with the use of fire-arms 4000 years ago, as Mr HALHED seems to believe, he who made that discovery must have had a very considerable knowledge of the powers of nature; for though gunpowder may have been discovered by accident in the East, as it certainly was in the West many ages afterwards, it is difficult to conceive how mere accident could have led any man to the invention of a gun. In astronomy, geometry, and chronology, too, they appear to have made some proficiency at a very early period. (See *ASTRONOMY*, *Index*.) Their chronology and astronomy are indeed full of those extravagant fictions, which seem to be essential to all their systems; but their calculations of eclipses, and their computations of time, are conducted upon scientific principles.

But though the mathematical part of the astronomy of the Pundits is undoubtedly respectable, their physical notions of the universe are in the highest degree ridiculous and extravagant. In the Vedas and Puranas, writings of which no devout Hindoo can dispute the divine authority, eclipses are said to be occasioned by the intervention of the monster *Rahu*: and the earth to be supported by a series of animals. "They suppose (says Mr Halhed) that there are 14 spheres, seven below and six above the earth. The seven inferior worlds are said to be altogether inhabited by an infinite variety of serpents, described in every monstrous figure that the imagination can suggest. The first sphere above the earth is the immediate vault of the visible heavens, in which the sun, moon, and stars are placed. The 2d is the first paradise and general receptacle of those who merit a removal from the lower earth. The 3d and 4th are inhabited by the souls of those men who, by the practice of virtue and dint of prayer, have acquired an extraordinary degree of sanctity. The 5th is the reward of those who have all their lives performed some wonderful act of penance and mortification, or who have died martyrs for their religion. The highest sphere is the residence of Brahma and his particular favourites, such as those men who have never uttered a falsehood during their whole lives, and those women who have voluntarily burned themselves with their husbands. All these are absorbed in the divine essence." On ethics, the Hindoos have nothing that can be called *philosophy*. Their duties, moral, civil, and religious, are all laid down in their *Pedas* and *Shasters*, and enjoined by what they believe to be divine authority; which supercedes all reasoning concerning their fitness or utility.

Of the ancient philosophy of the ARABIANS and Chinese nothing certain can be said; and the narrow limits of such an abstract as this, do not admit of our mentioning the conjectures of the

learned, which contradict each other, and are all equally groundless. There is indeed sufficient evidence, that both nations were at a very early period observers of the stars; and that the Chinese had even a theory by which they foretold eclipses, (see *ASTRONOMY*, *Index*); but there is reason to believe that the Arabians, like other people in their circumstances, were nothing more than judicial astrologers, who possessed not the smallest portion of astronomical science. Pliny makes mention of their magi, whilst later writers tell us, that they were famous for their ingenuity in solving enigmatical questions, and for their skill in the arts of divination: but the authors of Greece are silent concerning their philosophy; and there is not an Arabian book of greater antiquity than the Koran extant. (See *PHILOLOGY*, *Secl.* III.)

We therefore pass to the PHOENICIANS, whose commercial celebrity has induced many learned men to allow them great credit for early science. If it be true, as seems probable, that the ships of this nation had doubled the Cape, and almost encompassed the peninsula of Africa long before the era of Solomon, we cannot doubt but that the Phœnicians had made great proficiency in navigation and astronomy, at a period of very remote antiquity. Nor were these the only sciences cultivated by that ancient people: *Mochus* or *Mochus* a Phœnician, who, according to Strabo, flourished before the Trojan war, was the author of the atomic philosophy, afterwards adopted by Leucippus, Democritus, and others among the Greeks; and it was with some of the successors of this sage that Pythagoras, as Jamblichus tells us, conversed at Sidon, and from them received his doctrine of *Monads*. (See *PYTHAGORAS*.) Another proof of the early progress of the Phœnicians in philosophy may be found in the fragments of their historian Sanchoniatho, which have been preserved by Eusebius. (See *SANCHONIATHO*.) This ancient writer teaches, that, according to the *wise men* of his country, all things arose at first from the necessary agency of an active principle, upon a passive chaotic mass, which he calls *mot*. This chaos Cudworth thinks was the same with the elementary *water* of Thales, who was also of Phœnician extraction; but Mosheim justly observes, that it was rather *dark air*, since Philo translates it *αἶρ σκοτάς*. Besides Mochus and Sanchoniatho, CADMUS, who introduced letters into Greece, may undoubtedly be reckoned a philosopher. (See *PHILOLOGY*, *Secl.* IV.) Several other Phœnician philosophers are mentioned by Strabo: but as they flourished at a later period, and philosophized after the systematic mode of the Greeks, they fall not properly under our notice. We pass on therefore to the philosophy of Egypt.

The Greeks confess, that all their learning and wisdom was derived from the EGYPTIANS, either imported immediately by their own philosophers, or brought through Phœnicia by the sages of the east; and we know from higher authority than the histories of Greece, that at a period so remote as the birth of Moses, the wisdom of the Egyptians was proverbially famous. Yet the history of Egyptian learning and philosophy, though men of the first eminence, both ancient and modern, have bestowed much pains in attempts to elu-

date

date it, still remains involved in clouds of uncertainty. That they had some knowledge of physiology, arithmetic, geometry, and astronomy, are facts which cannot be questioned; but there is reason to believe, that even these sciences were in Egypt pushed no farther than to the uses of life. That they believed in the existence of incorporeal substances is certain; because Herodotus assures us, that they were the first asserters of the immortality, pre-existence, and transmigration of human souls, which they could not have been without holding those souls to be at least *incorporeal*, if not *immaterial*. The author of Egyptian learning is generally acknowledged to have been THOTH, *Thout*, or *Taut*, called by the Greeks HERMES, and by the Romans MERCURY; but of this personage very little is known. (See these articles.) Plato says that Thoth was the inventor of letters; and left we should suppose that by those letters nothing more is meant than picture writing or symbolical hieroglyphics, it is added, that he distinguished between *vowels* and *consonants*, determining the number of each. The same philosopher attributes to Thoth the invention of *arithmetic, geometry, astronomy, and hieroglyphic learning*.

The art of ALCHEMY has been said to have been known by the ancient Egyptians; and from HERMES, the author of the Egyptian philosophy, it has been called the *Hermetic art*. But though this is unquestionably a fiction, there is evidence that they were possessed of one art, which is even yet a *desideratum* in the practice of chemistry; viz. the art of rendering gold potable, which Moses evidently possessed. (See CALF, GOLDEN, and Exod. xxii. 20.) When the intercourse between the Egyptians and Greeks first commenced, the wisdom of the former people consisted chiefly in the science of legislation and civil policy, and that the philosopher, the divine, the legislator, and the poet, were all united in the same person. Their cosmogony differed little from that of the Phenicians. They held that the world was produced from chaos by the energy of an intelligent principle; and they likewise conceived that there is in nature a continual tendency towards dissolution. In Plato's Timæus, an Egyptian priest is introduced describing the destruction of the world, and asserting that it will be effected by means of water and fire. They conceived that the universe undergoes a periodical conflagration; after which all things are restored to their original form, to pass again through a similar succession of changes.

"Of preceptive doctrine" (says Dr ENFIELD, in his *Hist. of Philos.*) "the Egyptians had two kinds, the one sacred, the other vulgar. The former, which respected the ceremonies of religion and the duties of the priests, was doubtless written in the sacred books of Hermes, but was too carefully concealed to pass down to posterity. The latter consisted of maxims and rules of virtue, prudence, or policy. Diodorus Siculus relates many particulars concerning the laws, customs, and manners of the Egyptians; whence it appears that superstition mingled with and corrupted their notions of morals. It is in vain to look for accurate principles of ethics among an ignorant and superstitious people. And that the ancient Egypt-

tians merited this character is evident from this single circumstance, that they suffered themselves to be deceived by impostors, particularly by the professors of the fanciful art of astrology." See EGYPT, MYSTERIES, MYTHOLOGY, &c.

"From Egypt and Phœnicia (says Dr ROBINSON and GLEIG,) philosophy passed into GREECE; where it was long taught without system, as in the countries from which it was derived. Phoroneus, Cecrops, Cadmus, and Orpheus, were among the earliest instructors of the Greeks; and they inculcated Egyptian and Phœnician doctrines in detached maxims, and enforced them, not by strength of argument, but by the authority of tradition. Their cosmogonies were wholly Phœnician or Egyptian, disguised under Grecian names; and they taught a future state of rewards and punishments. The planets and the moon, Orpheus conceived to be habitable worlds, and the stars to be fiery bodies like the sun; but he taught that they are all animated by divinities; an opinion which prevailed both in Egypt and the east; and it does not appear that he gave any other proof of his doctrines, than a confident assertion, that they were derived from some god. See ORPHEUS.

"Hitherto we have seen philosophy in its state of infancy and childhood, consisting only of a collection of sententious maxims and traditionary opinions; but among the Greeks, an ingenious and penetrating people, it soon assumed the form of profound speculation and systematic reasoning. Two eminent philosophers arose nearly at the same period, who may be considered as the parents not only of Grecian science, but of almost all the science cultivated in Europe, prior to the era of the great Lord Verulam: These were THALES and PYTHAGORAS; of whom the former founded the Ionic school, and the latter the Italic; from which two sprung the various sects into which the Greek philosophers were afterwards divided. A bare enumeration of these sects is all that our limits will admit of; and we shall give it in the perspicuous language and just arrangement of Dr ENFIELD, referring our readers for a fuller account than we can give of their respective merits to his abridged translation of Brucker's history.

I. "Of the IONIC SCHOOL were, 1. The IONIC sect proper, whose founder THALES had as his successors Anaximenes, Anaxagoras, Diogenes, Apollonates, and Archelaus. 2. The SOCRATIC school, founded by SOCRATES, the principal of whose disciples were Xenophon, Æschines, Cimon, Cebes, Aristippus, Phædo, Euclid, Plato, Antisthenes, Critias, and Alcibiades. 3. The CYRENAIC sect, of which Aristippus was the author; his followers were, his daughter Arete, Hegesias, Anicetus, Theodorus, and Bion. 4. The MEGARIC or Eristic sect, formed by EUCLID of Megara; to whom succeeded Eubulides, Diodorus, and Stilpo, famous for their logical subtlety. 5. The ELIAC or Eretriac school, raised by Phædo of Elis, who, though he closely adhered to the doctrine of Socrates, gave name to his school. His successors were Plisitanus and Menedemus; the latter of whom, being a native of Eretria, transferred the school and name to his own country. 6. The ACADEMIC sect, of which PLATO was the founder. After his death, many of his disciples deviating from

his doctrine, the school was divided into the old, new, and middle academies. 7. The PERIPATETIC sect, founded by Aristotle, whose successors in the Lyceum were Theophrastus, Strato, Lycon, Aristo, Critolus, and Diodorus. Among the Peripatetics, besides those who occupied the chair, were also Diczarchus, Eudemus, and Demetrius Phalerus. 8. The CYNIC sect, of which the author was Antisthenes, whom DIOGENES, Oenecritus, Crates, Metrocles, Meisipus, and Menodæmus, succeeded. In the list of Cynic philosophers must also be reckoned Hipparchis, the wife of Crates. 9. The STOEIC sect, of which ZENO was the founder. His successors in the porch were Persæus, Aristo of Chios, Herillus, Sphærus, Cleanthes, Chrysippus, Zeno of Tarsus, Diogenes the Babylonian, Antipater, Panætinus, and Pefidonius.

II. "Of the ITALIC SCHOOL were, 1. The Italic sect proper: it was founded by PYTHAGORAS, a disciple of Pherecydes. The followers of Pythagoras were Arillus, Mnesarchus, Alcmaeon, Ecphantus, Hippo, Empedocles, Epicharmus, Ocellus, Timæus, Archytas, Hippasus, Philolaus, and Endoxus. 2. The Eleatic sect, of which Xenophanes was the author: his successors, Parmenides, Melissus, Zeno belonged to the metaphysical class of this sect; Leucippus, Democritus, Protagoras, Diagoras, and Anaxarchus, to the physical. 3. The Heraclitean sect, which was founded by Heraclitus, and soon afterwards expired: Zeno and Hippocrates philosophized after the manner of Heraclitus, and other philosophers borrowed freely from his system. 4. The EPICUREAN sect, a branch of the Eleatic, had EPICURUS for its author; among whose followers were Metrodorus, Polyænus, Hermachus, Polystratus, Basilides, and Protarchus. 5. The Pyrrhonic or Sceptic sect, the parent of which was Pyrrho; his doctrine was taught by Timon the Phliasian; and after some interval was continued by Ptolemy a Cyrenean, and at Alexandria by Ænesidemus."

Of the peculiar doctrines of these sects, the reader will in this work find a short account, either in the lives of their respective founders, or under the names of the sects themselves. All the systematical philosophers, however, pursued their inquiries into nature by nearly the same method. Of their philosophy as well as of ours, the universe, with all that it contains, was the vast object; but the individual things which compose the universe are infinite in number, and ever changing; and therefore, according to an established maxim of theirs, incapable of being the subjects of human science. To reduce this infinitude, and to fix those fleeting beings, they established certain definite arrangements or classes, to some of which every thing past, present, or to come, might be referred; and having ascertained, as they thought, all that could be affirmed or denied of these classes, they proved, by a very short process of syllogistic reasoning, that what is true of the class must be true of every individual comprehended under it. The most celebrated of these arrangements is that which is known by the name of CATEGORIES; which Mr Harris thinks at least as old as the era of Pythagoras, and to the forming of which mankind would, in his opinion, be necessarily led by the following considerations. Every subject of

human thought is either *substance* or *attribute*; but *substance* and *attribute* may each of them be modified under the different characters of *universal* or *particular*. Hence there arises a quadruple arrangement of things into *substance universal* and *substance particular*; into *attribute universal* and *attribute particular*; to some one of which four not only our words and ideas, but every individual of that immense multitude of things which compose the universe, may be reduced. This arrangement, however, the learned author thinks too limited; and he is of opinion, that, by attending to the substances with which they were furnished, the Grecian schools must soon have distinguished between the attributes *essential* to all substances, and those which are only *circumstantial*; between the attributes proper to *natural* substances or bodies, and those which are peculiar to *intelligible* substances or minds. He likewise thinks, that the *time* and *place* of the existence of substances not present, must soon have attracted their attention; and that, in considering the place of this or that substance, they could hardly avoid thinking of its *position* or *situation*. He is of opinion, that the superinduction of one substance upon another would inevitably suggest the idea of *cloathing* or *habitus*, and that the variety of *co-existing* substances and attributes would discover to them another attribute, viz. that of *relation*. Instead therefore of confining themselves to the simple division of *substance* and *attribute*, they divided *attribute* itself into nine distinct sorts, some *essential* and others *circumstantial*; and thus by setting substance at their head, made ten *comprehensive* and *universal* genera, called, with reference to their Greek name, *categories*, and with reference to their Latin name, *predicaments*. These categories are, SUBSTANCE, QUALITY, QUANTITY, RELATION, ACTION, PASSION, WHEN, WHERE, POSITION, and HABIT; which, according to the systematic philosophy of the Greeks, comprehend every human science and every subject of human thought. *History*, natural and civil, springs, says Mr Harris, out of SUBSTANCE; *mathematics* out of QUANTITY; *optics* out of QUALITY and QUANTITY; *medicine* out of the same; *astronomy* out of QUANTITY and MOTION; *music* and *mechanics* out of the same; *painting* out of QUALITY and SITE; *ethics* out of RELATION; *chronology* out of WHEN; (or TIME); *geography* out of WHERE (or PLACE); *electricity*, *magnetism*, and *attraction*, out of ACTION and PASSION; and so in other instances.

"To these categories, considered as a mere arrangement of science, we are not inclined to make many objections. The arrangement is certainly not complete; but this is a matter of comparatively small importance; for a complete arrangement of science cannot, we believe, be formed. The greatest objection to the categories arises from the use that was made of them by almost every philosopher of the Grecian schools; for those sages having reduced the objects of all human science to ten general heads or general terms, instead of setting themselves to inquire, by a painful induction, into the nature and properties of the real objects before them, employed their time in conceiving what could be predicated of *substance* in general, of this or that *quality*, *quantity*, *relation*, &c. in the abstract; and they soon found, that of such

general

general conceptions as the *categories* there are but five *predicables* or classes of *predicates* in nature. The first class is that in which the *predicate* is the *genus* of the *subject*; the 2d, that in which it is the *species* of the *subject*; the 3d, is when the *predicate* is the *specific difference* of the *subject*; the 4th, when it is a *property* of the *subject*; and the 5th, when it is something *accidental* to the *subject*. (See LOGIC, Part II. SECT. II. and III.). Having proceeded thus far in their system, they had nothing to do with individuals, but to arrange them under their proper categories, which was commonly done in a very arbitrary manner; and then, with the formality of a syllogism, to predicate of each he predicable of the genus or species to which it belonged. But by this method of proceeding, it is obvious that no progress whatever could be made in physical, metaphysical, or ethical science; for if the individual truly belongs to the category under which it is arranged, we add nothing to our stock of knowledge by affirming or denying of it what we had before affirmed or denied of the whole genus; and if it belong not to the category under which we arrange it, our syllogizing will only give the appearance of proof to what must, from the nature of things, be an absolute fallshood.

"This mode of philosophizing, however, spread from Greece over the whole civilized world. It was carried by Alexander into Asia, by his successors into Egypt; and it found its way to Rome after the conquest of Greece. It was adopted by the Jews, by the Christian fathers, by the Mahometan Arabs during the caliphate, and by the schoolmen through all Europe, till its futility was exposed by Lord VERULAM. The professors of this philosophy often displayed great acuteness; but their systems were built on mere hypotheses, and supported by syllogistic wrangling. Now and then indeed a superior genius, such as Aihazen and our countryman Roger Bacon, broke through the trammels of the schools, and, regardless of the authority of the Stagyrite and his *categories*, made real discoveries in physical science, by experiments judiciously conducted on individual substances (see BACON, N° 5, and OPTICS, Index); but the science in repute still continued to be that of *Generals*.

What is properly called *PHYSICS* had in Europe no place in a liberal education, from the end of the 8th century to the end of the 14th. Towards the beginning of this period of darkness, the whole circle of instruction, or the *liberal arts* as they were called, consisted of two branches, the *trivium* and the *quadrivium*; of which the former comprehended *grammar*, *rhetoric*, and *dialectics*; the latter *music*, *arithmetic*, *geometry*, and *astronomy*, to which was added, about the end of the 11th century, the study of a number of *metaphysical abilities* equally useless and unintelligible. The works of the ancient Greek philosophers had been hitherto read only in imperfect Latin translations; and before the scholastic system was completely established, Plato and Aristotle had been alternately looked up to as oracles in science. The rigid schoolmen, however, universally gave the preference to Aristotle; because his analysis of *body* into *matter* and *form* is peculiarly calculated to keep in countenance the most incredible doctrine of the Romish church (see TRANSUBSTANTIATION);

and, upon the revival of Greek learning, this preference was continued after the school philosophy had begun to fall into contempt.

At last LUTHER and his associates set the minds of men free from the tyranny of ancient names, both in science and theology; and many philosophers sprung up in different countries of Europe, who professed to study nature, regardless of every authority but that of reason. Of these the most eminent beyond all comparison was FRANCIS BACON, Lord VERULAM. (See BACON, N° 2.) This illustrious man, having read with attention the writings of the most celebrated ancients, and made himself master of the sciences which were then cultivated, soon discovered the absurdity of pretending to account for the phenomena of nature by syllogistic reasoning from hypothetical principles; and, with a boldness becoming a genius of the first order, undertook to give a new chart of human knowledge. This he did in his two admirable works, entitled, 1. *De dignitate et augmentis scientiarum*; and, 2. *Novum organum scientiarum, sive Judicia vera de interpretatione Naturæ*. In the former of these works he takes a very minute survey of the whole circle of human science, which he divides into three great branches, *history*, *poetry*, and *philosophy*, corresponding to the three faculties of the mind, *memory*, *imagination*, and *reason*. Each of these general heads is subdivided into minuter branches, and reflections are made upon the whole, which, though we can neither copy nor abridge them, will amply reward the perusal of the attentive reader. The purpose of the *Novum Organum* is to point out the proper method of interpreting nature; which the author shows can never be done by the logic which was then in fashion, but only by a painful and fair induction.

This great man was no less an enemy to hypotheses and preconceived opinions, which he calls *idola theatri*, than to syllogisms; and since his days almost every philosopher of eminence, except Descartes and his followers (see CARTES, and CARTESIANS), has professed to study nature according to the method of induction, so accurately laid down in his *Novum Organum*. On this method a few improvements have been made; but Lord Verulam must still be considered as the author of that philosophy which is now cultivated in Europe, and which will continue to be cultivated as long as men shall have more regard for *facts* than for hypothetical opinions. Of this mode of philosophizing we shall now give a short but accurate view, by stating its objects, comparing it with that which it superceded, explaining its rules, and pointing out its uses; and from this view it will appear, that its author shares with ARISTOTLE the empire of science.

SECT. II. VIEW OF L. VERULAM'S PHILOSOPHY.

THAT unbounded object of the contemplation, curiosity, and researches of man, the universe; may be considered in two different points of view.

It may first be considered merely as a collection of existences, related to each other by means of resemblances and distinctions; situation, succession, and derivation, as making parts of a whole. In this view it is the subject of pure description.

In order to acquire a knowledge of the universe

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in this point of view, we must enumerate all the beings in it, mention all their sensible qualities, and mark all these relations for each. But this would be labour immense; and when done, an undistinguishable chaos. A book containing every word of a language would only give us the materials of this language. To make it comprehensible, it must be put into some form, which will comprehend the whole in a small compass, and enable the mind to pass easily from one word to another related to it. Of all relations among words, the most obvious are those of resemblance and derivation. An etymological dictionary, therefore, in which words are classed in consequence of their resemblances, and arranged by means of their derivative distinctions, will greatly facilitate the acquisition of the language.

Thus too, the objects of nature around us may be classed according to their resemblance, and then arranged in those classes by particular distinctions. In this classification we proceed by our faculty of abstracting our attention from the circumstances in which things differ, and turning it to those only in which they agree. By this faculty we can not only distribute the individuals into classes, but also subdivide those classes into orders, genera, and species. Thus a vast number of individuals resembling each other in the single circumstance of *life*, composes the most extensive kingdom of ANIMALS. If it be required that they shall further resemble in the circumstance of having feathers, a prodigious number of animals are excluded, and we form the inferior class of BIRDS. We exclude a great number of birds, by requiring a further similarity of web feet, and have the order of ANSERES. If we add *lingua citiata*, we confine the attention to the genus of ANATES. In this manner may the whole objects of the universe be arranged, divided, and subdivided, into kingdoms, classes, orders, genera, and species.

This classification and arrangement is called NATURAL HISTORY; and is the only foundation of any extensive knowledge of nature. To the natural historian, therefore, the world is a collection of existences, the subject of descriptive arrangement. His aim is threefold: 1. To observe with care, and describe with accuracy, the various objects of the universe. 2. To determine and enumerate all the great classes of objects; to distribute and arrange them into all their subordinate classes, through all degrees of subordination, till he arrive at what are only accidental varieties, which are susceptible of no farther distribution; and to mark with precision the principles of this distribution and arrangement, and the characteristics of the various assemblages. 3. To determine with certainty the particular group to which any proposed INDIVIDUAL belongs.

DESCRIPTION, therefore, ARRANGEMENT, and REFERENCE, constitute the whole of his employment; and in this consists all his science.

Were the universe to continue unchanged, this would constitute the whole of our knowledge of nature; but we are witnesses of an uninterrupted succession of changes, and our attention is continually called to the EVENTS which are incessantly happening around us. These form a set of objects vastly more interesting to us than the former; being

the sources of almost all the pleasures or pains we receive from external objects.

The study of the events which happen around us is highly interesting, and we are strongly incited to prosecute it; but they are so numerous and so multifarious, that the labour would be immense without some contrivance for abbreviating and facilitating it. The same help offers itself here in the study of what may be called *quiescent nature*. Events, like existences, are susceptible of classification, in consequence of resemblances and distinction; and by attention to these, we can acquire a very extensive acquaintance with active nature. Our attention must be chiefly directed to those circumstances in which many events resemble each other, while they differ perhaps in a thousand others. Then we must attend to their most general distinctions, then to distinctions of smaller extent and so on. In this way, accordingly, we have advanced in our knowledge of active nature, and are gradually, and by no means slowly, forming assemblages of events more and more extensive and distributing these with greater and greater precision into their different classes.

In describing those circumstances of similarity among events, and in distributing them according to those similarities, it is impossible to overlook that constancy which is observed in the changes of nature, in the events which are the objects of our contemplation. Events which have once been observed to accompany each other are observed always to do so. The rising of the sun is always accompanied by the light of day, and his setting by the darkness of night. Sound argument is accompanied by conviction, impulse by motion, kindness by a feeling of gratitude, and the perception of good by desire. The uniform experience of mankind informs us, that the events of nature go on in certain regular trains; and if sometimes exceptions seem to contradict this general affirmation, more attentive observation never fails to remove the exception. Most of the spontaneous events of nature are very complicated; and it frequently requires great attention and penetration to discover the simple event amidst a crowd of unessential circumstances which are at once exhibited to our view. But when we succeed in this discovery, we never fail to acknowledge the perfect uniformity of the event to what has been formerly observed.

Hence we firmly believe that this uniformity will still continue; that fire will melt wax, will burn paper, will harden clay, as we have formerly observed it to do; and whenever we have undoubted proofs that the circumstances and situation are precisely the same as in some former case, though but once observed, we expect with confidence that the event will also be the same.

Many proofs of the universality of this law of human thought are not necessary. The whole language and actions of men are instances of the fact. In all languages there is a mode of construction used to express this relation as distinct from all others, and the conversation of the most illiterate never confounds them. The general employment of the active and passive verb is regulated by it. "The tower was demolished by the soldiers" and "the town was overthrown by an earthquake;" are sentences

sentences that express two relations, and no school-boy will mistake them. The distinction therefore is perceived or felt by all. Nor is any language without general terms to express this relation, cause, and effect. Nay, even brutes show that they expect the same uses of every subject which they formerly made of it; and without this, animals would be incapable of subsistence, and man incapable of all improvement. From this alone memory derives all its value; and even the constancy of natural operation would be useless, if not matched or adapted to our purposes by this expectation of and confidence in that constancy.

The result of all the inquiries of ingenious men, to discover the foundation of this irresistible expectation, is "*such is the constitution of the human mind.*" It is an *universal fact* in human thought; and it appears to be an *ultimate fact*, not included in any other still more general. This is sufficient for making it the foundation of true human knowledge; all of which must in like manner be reduced to ultimate facts in the human thought.

This persuasion of the constancy of nature, we must consider as an *instinctive* anticipation of events similar to those which we have already experienced. The general analogy of nature should have disposed philosophers to acquiesce in this. In no instance of importance to our safety or well-being are we left to the guidance of our boasted *reason*; God has given us the surer conduct of natural *instincts*. No case is so important as this; in none do we so much stand in need of a guide, which shall be powerful, infallible, and rapid in its decisions. Without it we would remain incapable of all instruction from experience, and therefore of all improvement.

Our sensations are no doubt feelings of our mind. But all those feelings are accompanied by an instinctive reference to something distinct from the feelings themselves. Hence arise our perceptions of external objects, and our very notions of this *externality*, if we may use the term. In like manner, this anticipation of events, this irresistible connection of the idea of fire with the idea of burning, is also a feeling of the mind; and this feeling is by a law of human nature referred, without reasoning, to something external as its cause; and, like our sensation, it is considered as a *sign* of that external something. It is like the connection of the truth of a mathematical proposition. The conviction is the sign or indication of this relation by which it is brought to our view. In the same manner, the irresistible connection of ideas is interpreted as the sensation or sign of a *necessary connection* of external things or events. There are supposed to include something in their nature which renders them inseparable companions. To this bond of connection between external things we give the name of *CAUSATION*. All our knowledge of this relation of cause and effect, is the knowledge or consciousness of what passes in our own minds, during the contemplation of the phenomena of nature. If we adhere to this view of it, and put this branch of knowledge on the same footing with those called the *abstract sciences*, considering only the *relations of ideas*, we shall acquire *demonstrative science*. Any other view of the matter will lead us into inextricable mazes of uncertainty and error.

Thus the natural procedure of our faculty of abstraction and arrangements to acquire a more speedy and comprehensive knowledge of natural events, presents them to our view in another form. We not only see them as *similar events*, but as events naturally and necessarily *conjoined*. And the expression of *resemblance* among events is also an expression of *concomitancy*: and this arrangement of events in consequence of their resemblance, is in fact the *discovery* of those accommodations. The trains of natural appearance being considered as the appointments of the Author of Nature, has occasioned them to be considered also as consequences of *laws* imposed on his works by their great Author, and every thing is said to be regulated by fixed laws.

The philosopher, as well as the theologian, who believes in the existence and superintendence of God, knows that the constant accompaniment of events is the consequence of laws which the great Author and Governor of the universe has imposed on his works. There is also a great resemblance between the expression *natural law* and *grammatical rule*. Rule in grammar expresses merely a generality of *fact*, whether of flexion or construction. In like manner, a *LAW OF NATURE* is to the philosopher nothing but the expression of a generality of *fact*. A natural or physical law is a generally observed fact; and whenever we treat any subject as a generally observed fact, we treat it physically. It is a physical law of the understanding, that argument is accompanied by conviction; it is a physical law of the affection that distress is accompanied by pity; it is a physical law of the material world that impulse is accompanied by motion. And thus we see that the arrangement of events, or the discovery of those general points of resemblance, is in fact the discovery of the laws of nature; and one of the greatest and most important, that the laws of nature are constant.

This view of the universe is incomparably more interesting and important than that which is taken by the natural historian; contemplating every thing that is of value to us, and, in short, the whole life and movement of the universe. This study, therefore, has been dignified with the name of *PHILOSOPHY* and of *SCIENCE*; and natural history has been considered as of importance only in so far as it is conducive to the successful prosecution of philosophy.

The philosopher claims a superiority on another account: he considers himself as employed in the discovery of causes, and that it is by the discovery of these relations that he communicates to the world such important knowledge. Philosophy, he says, is the science of causes. The vulgar are contented to consider the prior of two inseparably conjoined events as the cause of the other; the stroke on a bell, for instance, as the cause of sound. But it has been clearly discovered by the philosopher, that between the blow on the bell and the sensation of sound, there are interposed a long train of events. The blow sets the bell a trembling; this agitates the air in contact with the bell; this agitates the air immediately beyond it; and thus between the bell and the ear may be interposed a numberless series of events, and as many more between the first impression on the

the ear and that last impression on the nerve by which the mind is affected. He can no longer therefore follow the nomenclature of the vulgar. Which of the events of this train therefore is the cause of the sensation? None of them: It is that *something* which inseparably connects any two of them, and constitutes their bond of union. These causes he considers as residing in one or both of the connected objects: diversities in this respect must therefore constitute the most important distinctions between them. They are therefore with great propriety called the *qualities*, the *properties*, of these respective subjects. As the events, from which we infer the existence of these qualities of things, resemble in many respects such events as are the consequences of the exertion of our own powers, these qualities are frequently denominated powers, forces, energies. Thus, from the instance of the sound of a bell, we infer the powers of impulse, elasticity, nervous irritability, and animal sensibility.

From this necessary connection between the objects around us, we not only infer the posterior event from the prior, or, in common language, the effect from the cause, but we also infer the prior from the posterior, the cause from the effect. We not only expect that the presence of a magnet will be followed by certain motions in iron filings, but when we observe such motions, we infer the presence and agency of a magnet. Joy is inferred from merriment, poison from sudden or unaccountable death, fire from smoke, and impulse from motion. And thus the appearances of the universe are the indications of the powers of the objects in it. As all our knowledge of the sentiments of others is derived from our confidence in their veracity; so all our knowledge of nature is derived from our confidence in the constancy of her operations. A credulity in our neighbour's veracity, refusing from that law of our mental constitution by which we speak, conducts us in the one case; and the constancy of nature, by which we infer general laws from particular facts, conducts us in the other. It is by the successful study of this language of nature that we derive useful knowledge. The knowledge of the influence of motives on the mind of man enables the statesman to govern kingdoms, and the knowledge of the powers of magnetism enables the mariner to pilot a ship through the pathless ocean.

LORD MONROE, in his *ancient Metaphysics*, says, that the ancients were *philosophers*, employed in the *discovery of causes*, and that the moderns are only *natural historians*, contenting themselves with observing the laws of nature, but paying no attention to the *causes* of things. Aristotle's professed aim, indeed, in his most celebrated writings, is the *investigation of causes*; and in his lordship's opinion, he has been so successful, that he has hardly left any employment for his successors besides that of *commenting* upon his works. Newton makes no such pretensions; his professed aim is merely to *investigate the general laws* of the planetary motions, and to apply these to the explanation of particular phenomena. He has discovered but *one law*, and has enabled us to explain the phenomena comprehended in it alone. But his investigation has been *complete*; and he has disco-

vered, beyond all possibility of contradiction, a *fact* which is uniform through the whole extent of the solar system; namely, that every body, nay that every particle in it, is continually *deflected* toward every other body; and that this deflection is, in every instance, proportional to the quantity of matter in that body toward which the deflection is directed, and to the reciprocal of the square of the distance from it. He has therefore discovered a physical law of immense extent. Nor has he been less successful in the explanation of particular phenomena. Of this there cannot be given a better instance than the explanation of the lunar motions from the theory of gravity begun by Newton, "*Mathesi sua faciem præsentem*," and now brought to such a degree of perfection, that if the moon's place be computed from it for any moment within the period of 2000 years back, it will not be found to differ from the place on which she was actually observed by the 100th part of her own breadth.

We may challenge the ARISTOTELIANS to name any one *cause* which has really been *discovered* by their great master, whether in the operations of mind or of body. They must not adduce the investigation of any natural law in which he has sometimes succeeded. With still greater confidence may we challenge them to produce any remarkable instance of the explanation of natural phenomena either of mind or body. By *explanation*, we mean an account of the production, and an appreciation of all the circumstances, susceptible of a scrupulous comparison with fact, and perfectly consistent with it. It is here that the weakness of this philosopher's hypothesis is most conspicuous; and his followers acknowledge, that in the inquiries which proceed by experiment, they have not derived great assistance from Aristotle's philosophy. But this, say they, does not derogate from the pre-eminence of his philosophy, because he has shown that the *particular* fields of observation are to be cultivated only by means of experiment. But surely every field of *observation* is *particular*. There is no *abstract* object of philosophical research, the study of which shall terminate in the philosophy of *universals*. There is therefore great room for suspecting, that Aristotle and his followers have not aimed at the discovery of causes, but only at the discovery of natural laws, and have failed in the attempt.

"There seems here to be a previous question: Is it possible to discover a *philosophical cause*, that something which is neither the prior nor the posterior of the two immediately adjoining events, but their bond of union, and this distinct from the union itself? It is evident that this is an inquiry purely experimental. It is of *human knowledge* we speak. This must depend on the nature of the human mind. This is a matter of contingency, known to us only by experiment and observation. By observing all the feelings and operations of the mind, and classing and arranging them like any other object of science, we discover the general laws of human thought and human reasoning; and this is all the knowledge we can ever acquire of it, or of any thing else.

"Much has been written on this subject. The most acute observation and sound judgment have been

been employed in the study; and considerable progress has been made in pneumatology. Many laws of human thought have been observed, and very distinctly marked; and philosophers are busily employed, some of them with considerable success, in the distribution of them into subordinate classes, so as to know their comparative extent, and to mark their distinguishing characters with a precision similar to what has been attained in botany and other parts of natural history; so that we may hope that this study will advance like others. But in all these researches, no phenomena have occurred which look like the perception or contemplation of these separate objects, of thought, these philosophical causes, this power *in abstracto*. No philosopher has ever pretended to state such an object of the mind's observation, or attempted to group them into classes. Those causes, those bonds of necessary union between the naturally conjoined events or objects, are not only perceived *by means* of the events alone, but are perceived solely *in* the events, and cannot be distinguished from the conjunctions themselves. They are neither the objects of separate observation, nor the productions of memory, nor inferences drawn from reflection on the laws by which the operation of our own minds are regulated; nor can they be derived from other perceptions in the way of argumentative inference. We cannot infer the paroxysm of terror from the appearance of impending destruction, nor the fall of a stone when not supported, as we infer the incommensurability of the diagonal and side of a square. This last is *implied* in the very conception or notion of a square; not as a consequence of its other properties, but as one of its essential attributes; and the contrary proposition is not only false, but incapable of being distinctly conceived. This is not the case with the other phenomenon, nor any matter of fact. The proofs, which are brought of a mathematical proposition, are not the reason of its being true, but the steps by which this truth is brought into our view; and frequently, as in the instance now given, this truth is perceived, not directly, but consequentially, by the inconceivableness of the contrary proposition.

“Mr HUME derives this irresistible expectation of events from the known effect of *custom*, the *association of ideas*. The correlated event is brought into the mind by this well known power of custom, with that vivacity of conception which constitutes belief or expectation. But without insisting on the futility of his theory of belief, this explanation *begs* the very thing to be proved, when it ascribes to custom a *power* of any kind. It is the origin of this very power which is the subject in dispute. Besides, on the genuine principles of scepticism, this custom involves an acknowledgment of past events, of a *something* different from present impressions, which, in this doctrine, are the only certain existences in nature; and, lastly, it is known, that *one* clear experience is a sufficient foundation for this unshaken confidence and anticipation. General custom can never, on Mr Hume's principles, give superior vivacity to any particular idea.

“This certain nonentity of it, as a separate ob-

ject of observation, and this impossibility to derive this notion of necessary and causal connection between the events of the universe from any source, have induced two of the most acute philosophers of Europe, LEIBNITZ and MALEBRANCHE, to deny that there is any such connection, and to assert that the events of the universe go on in corresponding trains, but without any causal connection, just as a well-regulated clock will keep time with the motions of the heavens without any kind of dependence on them. This harmony of events was pre-established by the Author of the Universe, in subserviency to the purposes he had in view in its formation. All those purposes which are cognisable by us, may certainly be accomplished by this perfect adjustment. But without insisting on the fantastic wildness of this ingenious whim, it is enough to observe, that it also is a begging of the question, because it supposes causation when it ascribes all to the agency of the Deity.

“Thus have we searched every quarter, without being able to find a source from which to derive this perception of a necessary connection among the events of the universe, or of this confident expectation of the continuance of physical laws; and yet we are certain of the feeling, and of the persuasion, be its origin what it may: for we speak intelligibly on this subject; we speak familiarly of *cause, effect, power, energy, necessary connection, motives and their influence, argument and conviction, reasons and persuasion, allurements and emotions, of gravity, magnetism, irritability, &c.*; and we carry on conversations on these subjects with much entertainment and seeming instruction. Language is the expression of thought, and every word expresses some notion or conception of the mind; therefore it must be allowed, that we have such notions as are expressed by *cause, power, energy*. But it is here, as in many cases, we perceive a distinction without being able to express it by a definition; and that we do perceive the relation of causation as distinct from all others, and in particular as distinct from the relation of contiguity in time and place; or the relation of agent, action, and patient, must be concluded from the uniformity of language, which never confounds them except on purpose, and when it is perceived. But even here we shall find, that none of the terms used for expressing those powers of substance, which are conceived as the causes of their characteristic phenomena, really express any thing different from the phenomena themselves. Let any person try to define the terms *gravity, elasticity, sensibility*, and the like, and he will find that the definition is nothing but a description of the phenomenon itself. The words are all derivatives, most of them verbal derivatives, implying action, gravitation, &c. As the general resemblances in shape, colour, &c. are expressed by the natural historian by generic terms, so the general resemblances in event are expressed by the philosopher in generic propositions, which, in the progress of cultivation, are also abbreviated into generic terms.

“This abundantly explains the consistency of our language on this subject, both with itself and with the operations of nature, without however affording

affording any argument for the truth of the assumption, that *causes* are the *objects* of philosophic research as separate existences; or that this supposed necessary connection is a *necessary truth*, whether supreme or subordinate. But since the perception of it has its foundation in the constitution of the human mind, it seems entitled to the name of a *first principle*. We are hardly allowed to doubt of this, when we consider the importance of it, and the care of nature to secure us in all things essential to our safety and well-being, from all danger, from inattention, ignorance, or indolence, by an instinct infallible in its information, and instantaneous in its decisions. "It would not be like her usual care (says Hume), if this operation of the mind, by which we infer like effects from like causes, and *vice versa*, were entrusted to the fallacious deduction of our reason, which is slow in its operations, appears not in any degree during the first years of infancy, and in every age and period of human life is extremely liable to error. It is more conformable to her *ordinary caution*, (mark the acknowledgment,) to secure to necessary an act of the mind by some instinct, or blind tendency, which may be infallible and rapid in all its operations, may discover itself at the first appearance of life, and may be independent of all the laboured deductions of reason. As she has taught us the use of our limbs, without giving us any knowledge of the nerves and muscles by which they are actuated; so she has implanted in us an instinct, which carries forward the thought in a course conformable to that established among external objects, though we be ignorant of the powers and forces on which this regularity depends."

"Such a knowledge (say our learned authors,) is quite unnecessary, and therefore causes are no more cognoscible by our intellectual powers, than colours by a man born blind: nay, whoever will be at the pains to consider this matter, agreeably to the received rules and maxims of logic, will find that necessary connection, or the bond of causation, can no more be the subject of philosophical discussion by man, than the ultimate nature of truth. It is precisely the same absurdity or incongruity, as to propose to examine *light* with a *microscope*. All that we can say is, that their existence is probable, but by no means certain. But all this is indifferent to the real occupation of the philosopher, and does not affect either the certainty, the extent, or the utility of the knowledge which he may acquire.

"We are now able to appreciate the high pretensions of the philosopher, and his claim to scientific superiority. We see that this can neither be founded on his object, nor his employment. His object is not causes; and his discoveries are nothing but the discovery of general facts and physical laws; and his employment is the same with that of the descriptive historian. He observes and describes with care and accuracy the events of nature; and then he groups them into classes, from resembling circumstances, detected in the midst of many others which are dissimilar and occasional. By gradually throwing out more circumstances of resemblance, he renders his classes more extensive; by carefully marking those circumstances in which the resemblance is obser-

ved, he characterises all the different classes: and by a comparison of these with each other, in respect to the number of resembling circumstances, he distributes his classes according to their generality and subordination; thus exhausting the whole assemblage, and leaving nothing unarranged but accidental varieties. In this procedure, every grouping of similar events is, *ipso facto*, discovering a physical law; and the expression of this assemblage is the expression of the physical law. And as every observation of this constancy of fact affords an opportunity for exerting the instinctive inference of natural connexion between the related subjects, every such observation is the discovery of a power, property, or quality, of natural substance. This observation of event is all we know of the connexion, all we know of the natural power. When the philosopher proceeds farther to the arrangement of events, according to their various degrees of complication, he is making an arrangement of all natural powers according to their various degrees of subordinate influence. And thus his occupation is similar to that of the descriptive historian, classification and arrangement; and this constitutes all the science attainable by both.

SECT. III. *Of the Employment of the Philosopher.*

In this view, philosophy may be defined, *the study of the phenomena of the universe*, to discover the *general laws* which indicate the powers of natural substances, to explain subordinate phenomena, and to improve art: Or, philosophy is the study of the phenomena of the universe, with a view to discover their causes, to explain subordinate phenomena, and to improve art. The task is undoubtedly difficult, and will exercise our noblest powers. The employment is manly, and the result important. It therefore justly merits the appellation of *philosophy*, although its objects are nowise different from those which occupy the attention of other men.

"The *EMPLOYMENT* of the philosopher, like that of the natural historian, is threefold; *DESCRIPTION, ARRANGEMENT, and REFERENCE*; while the objects are not *things* but *events*.

"The description, when employed about events, may be more properly termed *history*. A philosophical history of nature consists in a complete or copious enumeration and narration of facts, properly selected, cleared of all extraneous circumstances, and accurately narrated. This constitutes the materials of philosophy. We cannot give a better example of this branch of philosophical occupation than *ASTRONOMY*.

"From the beginning of the Alexandrian school to this day, astronomers have been at immense pains in observing the heavenly bodies, to detect their true motions. This has been a work of prodigious difficulty: for the *appearances* are such as might have been exhibited although the real motion had been extremely different. Not that our senses give us false information; but we form hastily, and frequently false judgments, from these informations; and call those things deceptions of sense, which are in fact errors of judgment. But the true motions have at last been discovered, and described

described with such accuracy, that the history may be considered as nearly complete. This is to be found in the usual systems of astronomy, where the tables contain a most accurate and synoptical account of the motion; so that we can tell with precision in what point of the heavens a planet *has been* seen at any instant that can be named. Sir Isaac Newton's Optics is such another perfect model of philosophical history, as far as it goes. This part of philosophy may be called PHENOMENOLOGY.

A general knowledge of the universe may thus be easily acquired and firmly retained, by classification and arrangement; which must proceed on resemblances *observed* in the events; the subsequent arrangement must be regulated by the distinctions of which those resemblances are still susceptible. This assemblage of events into groups must be expressed. They are facts; therefore the expression must be proposition. These propositions must be what logicians call *general or abstract propositions*; for they express not any individual fact of the assemblage, but that circumstance in which they all resemble. Such propositions are the following: *Proof* is accompanied by *belief*; *kindness* is accompanied by *gratitude*; *impulse* is accompanied by *motion*. These are usually called *general facts*; but there are none such; every fact is *individual*. This language, however inaccurate, is very safe from misconstruction. And we may use it without scruple. These propositions are NATURAL OR PHYSICAL LAW; and then the detecting and marking those resemblances in event, is the investigation of physical laws; and we may denominate this employment of the philosopher INVESTIGATION.

"In the prosecution of this task, the similarities of fact will be found of various extent; and thus we form physical laws of various extent; and we find that some are subordinate to others; for the resemblance of a number of facts in one circumstance does not hinder a part of them from also resembling in another circumstance: and thus we find subordination of fact in the same way as of quiescent qualities. And it is found here, as in natural history, that our assemblage of resembling events will be the more extensive as the number of resembling circumstances is smaller; and thus we shall have kingdoms, classes, orders, genera, and species of phenomena, which are expressed by physical laws of all those different ranks.

"This observation of physical laws is always accompanied by a reference of that uniformity of event, to a natural bond of union between the concomitant facts, which is conceived by us as the *cause* of this concomitancy; and therefore this procedure of the philosopher is considered as the discovery of those causes, or powers of natural substances, which constitute their physical relations, and may justly be called their distinguishing *qualities or properties*. This view of the matter gives rise to a new nomenclature. We give to those powers generic names, such as *sensibility, intelligence, irritability, gravity, elasticity, fluidity, magnetism, &c.* These terms mark resembling circumstances of events; and no other definition can be given of them but a description of these circumstances. In a few cases which have been

the subjects of more painful or refined discussion, we have proceeded farther in this abbreviation of language.

"We have framed the verb to *gravitate*, and the verbal noun GRAVITATION, which purely expresses the fact, the phenomenon; but are conceived to express the *operation* or energy of the cause or natural power. It is of importance to keep in mind this metaphysical remark of these terms; for a want of attention to the pure meaning of the words has frequently occasioned very great mistakes in philosophical science. We may call this part of the philosopher's employment ASTRONOMY. We shall give an instance of its most successful application to the class of events already adduced, as an example of philosophical history or phenomenology.

"KEPLER, a celebrated Prussian astronomer, having maturely considered the phenomena recorded in the tables and observations of his predecessors, discovered, amidst all the varieties of the planetary motions, three circumstances of resemblance, which are now known by the name of KEPLER'S LAWS." See ASTRONOMY, *Index*; and KEPLER, § 3; also KEPLER'S PROBLEM, § 4.

"Long after this discovery of Kepler, Sir ISAAC NEWTON found that these laws of Kepler were only particular cases of a fact or law still more general. He found that the deflections of the planets from uniform rectilinear motion were all directed to the sun; and that the simultaneous deflections were inversely proportional to the squares of the distances from him. Thus was established a physical law of vast extent; but further observation showed him, that the motion of every body of the solar system was compounded of an original motion of projection, combined with a deflection towards every other body; and that the simultaneous deflections were proportional to the quantity of matter in the body towards which they were directed, and to the reciprocal of the square of the distance from it. Thus was the law made still more general. He compared the deflection of the moon in her orbit with the simultaneous deflection of a stone thrown from the hand, and describing a parabola; and he found that they followed the same law, that is, that the deflection of the moon in a second, was to that of the stone in the same time, as the square of the stone's distance from the centre of the earth, to the square of the moon's distance from it. Hence he concluded, that the deflection of a stone from a straight line was just a particular instance of the deflections which took place through the whole solar system.

"The DEFLECTION of a stone is one of the indications it gives of its being heavy; whence he calls it GRAVITATION. He therefore expresses the physical law which obtains through the whole solar system, by saying that "every body *gravitates* to every other body; and the gravitations are proportional to the quantity of matter in that other body, and inversely proportional to the square of the distance from it." Thus we see how the arrangement of the celestial phenomena terminated in the discovery of physical laws; and that the expression of this arrangement is the law itself. Since the fall of a heavy body is one in-

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stance of the physical law, and since this fall is considered by all as the effect of its *weight*, and this weight is considered as the cause of the fall, the same cause is assigned for all the deflections observed in the solar system; and all the matter in it is found to be under the influence of this cause, or to be heavy; and thus his doctrine has been denominated the *system of universal GRAVITATION*. See *ASTRONOMY, Index*.

"Philosophers have gone farther, and have supposed that gravity is a power, property, or quality, residing in all the bodies of the solar system. Sir Isaac Newton does not expressly say so. He contents himself with the immediate consequence of the first axiom in natural philosophy, viz. that every body remains in a state of rest, or of uniform rectilinear motion, unless affected by some moving force. Since the bodies of the solar system are neither in a state of rest, nor of uniform rectilinear motion, they must be considered as so affected; that is, that there operates on every one of them a moving force, directed towards all the others, and having the proportions observed in the deflection. Other philosophers assert, that all the bodies of the solar system are continually impelled by a fluid which they call *æther*, which is moving in all places, and in all directions, or in circular vortices, and hurries along with it the planets and all heavy bodies. But the philosophers who adhere to the rules of philosophic discussion, deny the legitimacy of this pretended investigation of causes; saying that, since the *fact of impulse* is not really observed in the celestial deflections, nor in the motions of heavy bodies, the law cannot be *inferred*. They say that neither the fluid nor the impulse are observed; and therefore they are in the right when they assert, that there is inherent in, or accompanies all the bodies of the system, a power by which they deflect to one another. See *OPTICS*, § 153—155.

But it is more to our present purpose to show how the observation and arrangement of phenomena terminate in the discovery of their causes, or of the powers or properties of natural substances. This is a task of great difficulty, as it is of great importance. There are two chief causes of this difficulty:

"1. In most of the spontaneous phenomena of nature there is a complication of many events, and some of them escape our observation. Attending only to the most remarkable, we conjoin these only in our imagination, and are apt to think these the concomitant events in nature, the proper indication of the cause, and the subjects of this philosophical relation, and to suppose that they are always conjoined by nature. Thus it was thought, that there resided in a vibrating chord a power by which the sensation of sound was excited, or that a chord had a founding quality. But late observations have shown clearly, that there is an unconceivable number of events interposed between the vibration of the chord and the sensitive affection of our ear; and therefore, that sound is not the effect of the vibration of the chord, but of the very last event of this series: and this is completely demonstrated by showing that the vibration and the sound are not

necessarily connected, because they are not *always* connected, but require the interposition of air or of some other elastic body. These observations show the necessity of the most accurate and minute observation of the phenomena, that none of those intermediate events may escape us, and we be thus exposed to the chance of imaginary connections between events which are far asunder in the procedure of nature. As the study has improved, mistakes of this kind have been corrected; and philosophers are careful to make their trains of events under one name as short as possible. Thus, in medicine, a drug is no longer considered as a *specific* remedy for the disease which is sometimes cured when it has been used, but is denominated by its most immediate operation on the animal frame: it is no longer called a *febrifuge*, but a *sudorific*.

"2. When many natural powers combine their influence in a spontaneous phenomenon of nature, it is frequently very difficult to discover what part of the complicated effect is the effect of each; and to state those circumstances of similarity which are the foundation of a physical law, or entitle us to infer the agency of any natural power. The most likely method for insuring success in such cases is to get rid of this complication of events, by putting the subject into such a situation that the operation of all the known powers of nature shall be suspended, or so modified as we may perfectly understand their effects. We can thus appreciate the effects of such as we could neither modify nor suspend, or we can discover the existence of a new law, the operation of a new power. This is called *making an experiment*; and is the most effectual way of advancing in the knowledge of nature, and has been called *EXPERIMENTAL PHILOSOPHY*. See *Part II*.

"It seems, however, at first sight, in direct opposition to the procedure of nature in forming general laws. These are formed by induction from multitudes of individual facts, and must be affirmed to no greater extent than the induction on which they are founded. Yet it is a matter of fact, a physical law of human thought, that one simple, clear, and unequivocal experiment gives us the most complete confidence in the truth of a general conclusion from it to every similar case. Whence this anomaly? It is not an anomaly or contradiction of the general maxim of philosophical investigation, but the most refined application of it. There is no law more general than this, that "*Nature is constant in all her operations*." The judicious and simple form of our experiment insures us (we imagine) in the complete knowledge of all the circumstances of the event. Upon this supposition, and this alone, we consider the experiment as the faithful representative of every possible case of the conjunction.

"The last branch of philosophic occupation is the explanation of subordinate phenomena. This is nothing more than the referring any particular phenomenon to that class in which it is included; or, pointing out the general law, or that general fact, of which the phenomenon is a particular instance. Thus the feeling of the obligations of virtue is thought to be explained, when it is shown to be a particular case of that regard which every

every person has for his dearest interests. The rise of water in pumps is explained, when we show it to be a particular case of the pressure of fluids, or of the air. The general law under which we show it to be properly arranged is called the **PRINCIPLE** of the explanation, and the explanation itself is called the **THEORY** of the phenomenon. Thus **EULER**'s explanation of the lunar irregularities is called the *theory of the lunar motions* on the principle of gravitation.

"This may be done either to advance our own knowledge of nature, or to communicate it to others. If done with the first view, we must examine the phenomenon minutely, and endeavour to detect every circumstance in it, and thus discover all the known laws of nature which concur in its production; we then appreciate the operation of each according to the circumstances of its exertion; we then combine all these, and compare the result with the phenomenon. If they are similar, we have explained the phenomenon. We cannot give a better example than **FRANKLIN**'s explanation of the phenomena of thunder and lightning. See **ELECTRICITY**, *Index*, and **LIGHTNING**.

"If we explain a phenomenon from known principles, we proceed synthetically from the general law already established, and *known* to exert its influence in the present instance. We state this influence both in kind and degree according to the circumstances of the case; and having combined them, we compare the result with the phenomenon, and show their agreement. Thus, because all the bodies of the solar system mutually gravitate, the moon gravitates to the sun as well as to the earth, and is continually, and in a certain determinate manner, deflected from that path which she would describe did she gravitate only to the earth. Her motion round the earth will be retarded during the first and 3d quarters of her orbit, and accelerated during the 2d and 4th. Her orbit and her period will be increased during our winter, and diminished during our summer. Her apogee will advance, and her nodes will recede; and the inclination of her orbit will be greatest when the nodes are in syzygie, and least when they are in quadrature. And all these variations will be in certain precise degrees. Then we show that all these things actually obtain in the lunar motions, and they are considered as explained.

"This summary account of the object and employment in all philosophical discussion is sufficient for pointing out its place in the circle of the sciences, and will serve to direct us to the proper methods of prosecuting it with success. Events are its object; and they are considered as connected with each other by causation, which may therefore be called the philosophical relation of things. The following may be adopted as the fundamental proposition on which all philosophical discussion proceeds, and under which every philosophical discussion or discovery may be arranged:

Every change that we observe in the state or condition of things is CONSIDERED by US as an effect, indicating the agency, characterising the kind, and determining the degree of its INFERRED cause."

"As thus enounced, (say our learned authors,) this proposition is evidently a physical law of human thought. It may be enounced as a necessary and independent truth, by saying, *every change is the state and condition of things IS AN EFFECT*, &c. And accordingly it has been so enounced by **DR REID** in his *Essays on the Intellectual Powers of Man*; and its title to this denomination has been abundantly supported by him. But we have no occasion to consider it as possessing this quality. We are speaking of *philosophy*, which is something contingent, depending on the existence and constitution of an intellectual being such as man; and in conformity to the view which we have endeavoured to give of human knowledge in the subjects of philosophical relation, it is quite sufficient for our purpose that we maintain its title to the rank of an universal law of human thought. This will make it a first principle, even although it may not be a necessary truth.

"All the proof necessary for this purpose is universality of fact; and we believe this to be without exception. We are not to expect that all mankind have made, or will ever make, a formal declaration of their opinion; but we may venture to say that all have made it, and continually do make it, virtually. What have the philosophers of all ages been employed about, but the discovery of the causes of those changes that are incessantly going on? Human curiosity has been directed to nothing so powerfully and so constantly as to this. Many absurd causes have been assigned for the phenomena of the universe; but no set of men have ever said that they happened *without a cause*. This is so repugnant to all our propensities and instincts, that even the atheistical sect, who, of all others, would have profited most by the doctrine, have never thought of advancing it. To avoid so shocking an absurdity, they have rather allowed that *chance*, and the *concurrence of atoms*, are the causes of the beautiful arrangements of nature. The thoughtless vulgar are no less solicitous than the philosophers to discover the causes of things. Had men never speculated, their conduct alone gives sufficient evidence of the universality of the opinion. The whole conduct of man is regulated by it, nay almost wholly proceeds upon it, in the most important matters, and where experience seems to leave us in doubt: and to act otherwise, as if any thing whatever happened without a cause, would be a declaration of insanity. **DR REID** has beautifully illustrated this truth, by observing, that even a child will laugh at you if you try to persuade him that the top, which he misses from the place where he left it, was taken away by *nobody*. You may persuade him that it was taken away by a fairy or a spirit; but he believes no more about this *nobody*, than the master of the house, when he is told that nobody was the author of a piece of theft or mischief. What opinion would be formed, says **DR REID**, of the intellects of the jurymen, on a trial for murder by persons unknown, who should say that the fractured skull, the watch and money gone, and other like circumstances, might possibly have no cause? he would be pronounced insane or corrupted.

"We believe that **MR HUME** is the first author who has ventured to call the truth of this opinion

in question; and even *he* does it only in the way of mere possibility. He acknowledges the *generality* of the opinion; and he only objects to the foundation of this generality, merely because it does not quadrate with his theory of belief; and therefore it *may* happen that some men may have no such opinion. But the opinion of a philosopher is of no greater weight in a case like this, than that of a plough-boy. If it be a first principle, directing the opinions and actions of all, it must operate on the minds of all. The philosopher is the only person who can chance to be without it: for it requires much labour, and long habits resolutely maintained, to *warp* our natural sentiments; and experience shows us that they may be warped if we are at sufficient pains. It is also worthy of remark, that this philosopher seems as much under the influence of this law as ordinary mortals. It is only when he is aware of its not tallying with his other doctrines that his scruples appear. Observe how he speaks when off his guard: "As to those impressions which arise from the senses, their ultimate cause is, in my opinion, perfectly inexplicable by human reason; and it will always be impossible to decide with certainty, whether they arise immediately from the object, are produced by the creative power of the mind, or are derived from the Author of our being." Among these alternatives he never thought of their *not* being derived from *any cause*.

"But it is not enough to show that this is a physical law of the human mind: we have assumed it as a first principle, the foundation of a whole science; therefore not included in or derived from any thing more general. Mr Hume's endeavours to shew that it is not a necessary truth, show with sufficient evidence, that most attempts to derive it in the way of argument, are *petitiones principii*; a thing very common in all attempt to prove first principles. It cannot be proved by induction of facts, that every event has a cause, because induction always supposes an *observed fact* or event. Now in by far the greatest number of events, the causes are unknown. Perhaps in no event whatever do we know the real cause, or that power or energy which, without any intervention, produces the effect. No man can say, that in the simplest event which he ever observed, he was fully apprised of every circumstance which concurred to its production. We suppose that no event in nature can be adduced more simple than the motion of a suspended glass ball, when gently struck by another glass ball, and we imagine that most of our readers will say that he perfectly sees every thing which happens in this phenomenon. We believe, too, that most of our readers are of opinion, that a body is never put in motion but by the impulse of another, except in the cases of animal motion; and that they are disposed to imagine that magnets put irons in motion, and that an electrified body moves another by means of an interposed, though invisible fluid, somehow circulating round them. But unless the stroke has been very smart, so smart indeed as to shatter the glass balls, the motion of the suspended ball was produced without impulse: that is, the two balls were not in contact during the stroke; and the distance between them was not less than the

smooth part of an inch, and probably much greater. It is not certain that even the most violent stroke, such as would shatter them to pieces, is enough to bring them into real contact. The proofs of this singular position are stated under OPTICS, § 154, 155.

"Unless, therefore, our readers are willing to allow, that the suspended ball was put in motion by a repulsive force inherent in one or both balls, they must acknowledge that they *do not* fully know all the circumstances of this so simple phenomenon, or all the train of events which happen in it; and therefore they are reduced to the necessity of *supposing*, although they do not see it, an intervening fluid or matter, by the immediate action of whose *adjoining* particles the motion is produced. This being the case in the simplest phenomenon, what shall we say of the numberless multitudes which are incomparably more complex? Must we not acknowledge that the efficient cause, even in the vulgar sense of the word, the immediately preceding events, are unknown, because the conjunctions are not observed? and therefore it cannot be said that it is from experimental induction that this truth gains universal belief. Nothing seems to remain, therefore, but to allow that this physical law of human judgment is *insinuated*, a constituent of the human soul, a first principle; and incapable of any other proof than the appeal to the feelings of every man.

"Simply to say, that every change is considered as an effect, is not giving the whole characters of this physical law. The cause is not always, perhaps never, *observed*, but is *inferred* from the phenomena. The inference is, therefore, in every instance, dependant on the phenomenon. The phenomenon is to us the language of nature. Assuming gravitation, as the cause of the planetary deviations from uniform rectilinear motion, we say that the gravitation of the moon is but *ye sixth* part of the gravitation of a stone thrown from the hand: but we say this only from observing that the deflection of the stone is 3600 times greater than the simultaneous deflection of the moon. In short, our whole knowledge of the cause is not only *founded* on our knowledge of the phenomenon, but *it is the same*. This will be found a remark of immense consequence in the prosecution of philosophical researches: and a strict attention to it will not only guard us against a thousand mistakes, into which the *reasoning pride* of man would continually lead us, but will also enable us fully to detect many egregious and fatal blunders made in consequence of this philosophical vanity.

Such is the account which is given by our learned authors, of PHILOSOPHY, the study of the works of God, as related by causation. It is of vast extent, reaching from an atom to the glorious Author of the Universe, and contemplating the whole connected chain of intelligent, sensitive, and inanimate beings. The philosopher makes use of the descriptions and arrangements of the natural historian, in the beginning of his career; confiding in the uniformity of nature, and expecting that similarity in the quiescent properties of things will be accompanied by some resemblances in those more important properties which constitute their mutual dependences, linking them together

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in a great and endlessly ramified chain of events. we have endeavoured to ascertain with precision the peculiar province of philosophy, both by means of its object and its mode of procedure. After this, it will not require many words to point out the methods for prosecuting the study with expedition and with success.

SECT. IV. SIR ISAAC NEWTON'S RULES OF PHILOSOPHISING.

The rules of philosophizing which NEWTON premises to his account of the planetary motions, which he so scrupulously followed, and with a success which gives them great authority, are all in strict conformity to the view we have now given of the subject.

"The chief rule is, that *similar causes* are to be assigned to *similar phenomena*. This is indeed the source of all our knowledge of connected nature; and without it, the universe would only present to us an incomprehensible chaos. It is by no means, however, necessary to enjoin this as a maxim for our procedure: it is an instinctive propensity of the human mind. It is absolutely necessary, on the contrary, to caution us in the application of this propensity. We must be extremely confident in the certainty of the resemblance before we venture to make any inference. We are prone to reason from analogy; the very employment is agreeable; and we are ever disposed to embrace opportunities of engaging in it. For this reason we are satisfied with very slight resemblances, and eagerly run over the consequences, as if the resemblances were complete; and thus our researches frequently terminate in falsehood.

"This propensity to analogical reasoning is aided by another equally strong, and equally useful, when properly directed; we mean the propensity to form general laws: it is in fact a propensity to discover *causes*, which is equivalent to the establishing of general laws. It appears in another form, and is called a love of, or taste for simplicity; and this is encouraged or justified, as agreeable to the uniformity and simplicity of nature. "*Natura semper sibi similis et consona*," says NEWTON; "*Frustra fit per plura quod fieri potest per pauciora*," says another. The beautiful, the wise economy of nature, are phrases in every body's mouth; and Newton enjoins us to adopt no more causes than are sufficient to explain the phenomena. All this is very well, and is true in its own degree; but it is too frequently the subterfuge of human vanity and self-love. This inordinate admiration of the economy and simplicity of nature, is generally enjoined with a manifest love of system, and with the actual production of some new system, where, from one general principle, some extensive theory or explanation is deduced or offered to the world. The author sees a sort of resemblance between a certain series of phenomena and the consequences of some principle, and thinks the principle adequate to their explanation. Then, on the authority of the acknowledged simplicity of nature, he roundly excludes all other principles of explanation; because, says he, this principle is sufficient, *et frustra fit per plura*, &c. We could point out many instances of this kind in the writings of perhaps the first mathematician, and the

poorest philosopher of the last century; where extensive theories are thus cavalierly exhibited, which a few years examination have shown to be nothing but analogies, indistinctly observed, and, what is worse, inaccurately applied.

"To regulate these hazardous propensities, (say our learned authors,) and keep philosophers in the right path, Newton inculcates another rule, or rather gives a modification of this injunction of simplicity. He enjoins, that *no causes shall be admitted but such as are true, and sufficient to account for the phenomena*. The meaning of this rule has been mistaken by many philosophers; who imagine that by *true*, he means causes which really exist in nature, and are not mere creatures of the imagination. We have met with some who would boggle at the doctrines of Aristotle respecting the planetary motions, *viz.* that they are carried along by conducting intelligent minds, because we know of *none such* in the universe; and who would nevertheless think the doctrine of the Cartesian vortices deserving of at least an examination, because we see such vortices exist, and produce effects which have some resemblance to the planetary motions, and have justly rejected them, *solely* because this resemblance has been very imperfect. We apprehend Newton's meaning is, that no cause of any event shall be admitted, or even considered, which *we do not know* to be actually concurring or exerting some influence in *that very event*. If this be his meaning, he would reject the Cartesian vortices, and the conducting spirits of Aristotle for one and the same reason; not because they were not adequate to the explanation, nor because such cases did not exist in nature, but because we did not see them any how concerned in the phenomenon under consideration. We neither see a spirit nor a vortex, and therefore need not trouble ourselves with enquiring what effects they would produce. This was his conduct, and has distinguished him from all philosophers who preceded him, though many, by following his example, have been rewarded by similar success. This has procured to Newton the character of the *modest* philosopher; and modest his procedure may be called, because the contrary procedure of others did not originate so much from ignorance as from vanity. Newton's conductor in this was not modesty, but sagacity, prudence, caution, and in a word, sound judgment.

"For the bonds of nature, the supposed philosophical causes are not *observed*, they are *inferred* from the phenomena. When two substances are observed, and only when they are observed, to be connected in any series of events, we *infer* that they are connected by a natural power: but when one of the substances is not seen but fancied, no law of human thought produces any inference whatever. For this reason, Newton stopped short at the last fact which he could discover in the solar system, that all bodies were deflected to all other bodies, according to certain regulations of distance and quantity of matter. When told that he *had done nothing* in philosophy, that he *had discovered no cause*, and that to merit any praise he must show *how* this deflection was produced:—he said, that he knew no more than he had told them; that he saw nothing causing this deflection; and

and was contented with having described it so exactly, that a good mathematician could now make tables of the planetary motions as accurate as he pleased, and with hoping, in a few years, to have every purpose of navigation and of philosophical curiosity completely answered. He was not disappointed. When philosophers were contriving hypothetical fluids, and vortices which would produce these defections, he contented himself with shewing the total inconsistency of these explanations with the mechanical principles acknowledged by their authors; and that their causes were neither *real*, nor sufficient for explaining the phenomena. A cause is sufficient for explaining a phenomenon only when its legitimate consequences are perfectly agreeable to these phenomena.

"NEWTON'S discoveries remain without diminution or change: no philosopher has yet advanced a step further. But let not the *authority*, or even the success of Newton be our guide, farther than they are supported by experiment. If philosophy be only the interpretation of nature's language, the inference of causes from the phenomena, a fancied or hypothetical phenomenon can produce nothing but a fanciful cause, and can make no addition to our knowledge of real nature.

SECT. V. Of the DANGER OF HYPOTHESES in PHILOSOPHY.

"All *hypotheses* must be banished from philosophical discussion, as frivolous and useless, administering to vanity alone. As the explanation of any appearance is nothing but the pointing out the general fact, of which this is a particular instance, a hypothesis can give no explanation: knowing nothing of cause and effect but the conjunction of two events, we see nothing of *causation* where one of the events is hypothetical. Although all the legitimate consequences of a hypothetical principle should be perfectly similar to the phenomenon, it is extremely dangerous to assume this principle as the real cause. It is illogical to make use of the economy of nature as an argument for the truth of any hypothesis: for if true, it is a physical truth, a matter of fact, and true only to the extent in which it is observed, and we are not entitled to say that it is so one step farther, *still it be observed*. But the proposition, that nature is so economical, is *false*; and it is astonishing that it has been so lazily acquiesced in by the readers of hypotheses: for it is not the *authors* who are deceived by it; they are generally led by their own vanity. Nothing is more observable than the *prodigious variety of nature*. That the same phenomena may be produced by different means, is well known to the astronomers, who must all grant, that the appearance of motion will be precisely the same, whether the earth moves round the sun like the other planets, or whether the sun, with his attendant planets, moves round the earth; and that the demonstration of the first opinion, is had from a fact totally unconnected with all the defections, or even with their causes; for it may be asserted, that Dr BRADLEY'S discovery of the *ABERRATION* of the fixed stars, in consequence of the progressive motion of light, was the first thing which put the Copernican system

beyond question; and even this is still capable of being explained in another way. The Author of Nature seems to delight in variety; and there cannot be named a single purpose in which the most inconceivable fertility in resource is not observed. It is the most delightful occupation of the inquisitive mind and the sensible heart, to contemplate the various contrivances of nature in accomplishing similar ends.

"As a principle, therefore, on which to found any maxim of philosophical procedure, this is not only *injudicious*, because imprudent and *apt* to mislead, but as *false*, and almost *sure* to mislead. Nothing indeed has done so much harm in philosophy, as the introduction of *hypotheses*.

"Authors have commonly been satisfied with very slight resemblances, and readers are easily misled by the appearances of reasoning which these resemblances have countenanced. The ancients, and above all ARISTOTLE, were much given to this mode of explanation, and filled philosophy with absurdities. The slightest resemblances were, with them, sufficient foundations of theories. It has been by very slow degrees that men have learned caution in this respect; and we are not yet cured of the disease of hypothetical systematizing. Nay, modern philosophers even of the greatest name, are by no means exempted from the reproach of hypothetical theories. Their writings abound in ethers, nervous fluids, animal spirits, vortices, vibrations, and other invisible agents. All these attempts may be shown to be either unintelligible, fruitless, or false. (See OPTICS, § 155—156.

"It may here be asked, Whether, in the case of the most perfect agreement, after the most extensive comparison, a hypothesis should be admitted? This must be left to the feelings of the mind. When the belief is irresistible, we can reason no more. But as there is no impossibility of as perfect an agreement with some other hypothesis, it is evident that it does not convey an irrefragable title to our hypothesis.

In a word, it is *impossible* that hypothetical explanations can give any addition of knowledge. In every hypothesis we thrust in an intermediate event between the phenomenon and some general law; and this event is not seen, but *supposed*. Therefore, according to the true maxims of philosophical investigation, we give no explanation; for we are not thereby enabled to assign the general in which this particular phenomenon is included: nay, the hypothesis makes no addition to our list of general laws; for our hypotheses must be *selected*, to tally with all the phenomena. The hypothesis therefore is understood only *by* and *in* the phenomena; and it must not be made more general than the phenomena themselves. The hypothesis gives no generalisation of facts. Its very application is founded on a coincidence of facts; and the hypothetical notion is thrust in between two facts, which we really observe to be united by nature. Let us then throw away entirely the hypothetical law, and insert the observed one in our list of general laws: it will be in different language from the hypothetical law, but it will express the facts in nature.

"It is in *experimental* philosophy alone that hypotheses

hypotheses can have any just claim to admission; and here they are not admitted as explanations, but as conjectures serving to direct our line of experiments. Effects only appear; and by their appearance, and the previous information of experience, causes are immediately ascertained by the perfect similarity of the whole train of events to other trains formerly observed. Or they are suggested by more imperfect resemblances of the phenomena; and these suggestions are made with stronger or fainter evidence, according as the resemblance is more or less perfect. These suggestions do not amount to a confidential inference, but only raise a conjecture. Withing to verify or overturn this conjecture, we have recourse to experiment. In this way conjectures have their use, and are the ordinary means by which experimental philosophy is improved. But *conjectural systems* are worse than nonsense, filling the mind with false notions of nature, and generally leading us into a course of improper conduct, when they become principles of action. This is acknowledged even by the abettors of hypothetical systems themselves, when employed in overturning those of their predecessors, and establishing their own; witness the successive maintainers of the many hypothetical systems in medicine, which have had their short-lived course within these two last centuries.

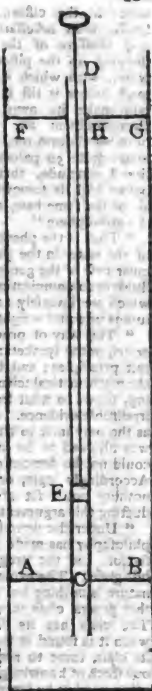
"Let every person, therefore, who calls himself a philosopher, resolutely determine to reject all temptations to this kind of system-making, and let him never consider any composition of this kind as any thing better than the amusement of an idle hour.

SECT. VI. Of the PROPER MODE OF PROSECUTING PHILOSOPHICAL INVESTIGATIONS.

"After these observations (our learned authors observe) it cannot require much discussion to mark the mode of procedure which will ensure progress in all philosophical investigations. The sphere of our intuitive knowledge is very limited; we must be indebted for the greatest part of our intellectual attainments to our rational powers, and it must be deductive. In the spontaneous phenomena of nature, whether of mind or body, it seldom happens that the energy of that natural power, which is the principle of explanation, is so immediately connected with the phenomenon that we see the connection at once. Its exertions are frequently concealed, and in all cases modified, by the joint exertions of other natural powers; the particular exertion of each must be considered apart, and their mutual connection traced out. It is only in this way that we can discover the train of intermediate operations, and see in what manner and degree the real principle of explanation concurs in the ostensible process of nature.

"In all such cases it is evident, that our investigation must proceed by steps, conducted by the sure hand of logical method. To take an instance, let us listen to Galileo, while he is teaching his friends the cause of the rise of water in a pump. He says that it is owing to the pressure of the air. This is his principle; and he announces it in all its extent. "All matter, says he, is heavy, and in particular air is heavy. He then points out the connection of this general principle with the phe-

nomenon. Air being heavy, it must be supported; it must lie and press on what supports it; it must press on the surface AB of the water in the cistern surrounding the pipe CD of the pump; and also in the water C within this pipe. He then takes notice of another general principle which exerts its subordinate influence in this process. Water is a fluid; a fluid is a body whose parts yield to the smallest impression; and, by yielding, are easily moved among themselves; and no little parcel of the fluid can remain at rest unless it be equally pressed in every direction, but will recede from that side where it sustains the greatest pressure. In consequence of this fluidity, known to be a property of water, if any part of it is pressed, the pressure is propagated through the whole; and if not resisted on every side, the water will move to that side where the propagated pressure is not resisted. All these subordinate or collateral propositions are supposed to be previously demonstrated or allowed. Water, therefore, must yield to the pressure of the air unless pressed by it on every side, and must move to that side where it is not with-held by some opposite pressure. He then proceeds to show, from the structure of the pump, that there is no opposing pressure on the water in the inside of the pump. "For (says he) suppose the piston thrust down till it touches the surface of the water in the pipe; suppose the piston now drawn up by a power sufficient to lift it, and all the air incumbent on it; and suppose it drawn up a foot or a fathom; there remains nothing now to press on the surface of the water. In short, the water in the pump is in the same situation it would be in, were there no air at all, but water poured into the cistern to a height AF, such, that the column of water FABG presses on the surface AB as much as the air does; in this case the water at C is pressed upwards with a force equal to the weight of a column of water, having the section of the pipe for its base, and CH for its height. The water below C therefore will be pressed up into the pipe CD, and will rise to G, so that it is on a level with the external water FG; that is, it will rise to H. This is a necessary consequence of the weight and pressure of the incumbent column FABG, and the fluidity of the water



water in the cistern. Consequences perfectly similar must necessarily follow from the weight and pressure of the air; and, therefore, on drawing up the piston from the surface of the water, with which it was in contact, the water must follow it till it attain that height, which will make its own weight a balance for the circumambient air. Accordingly, the Italian plumbers inform me, that a pump will not raise water quite 50 palms; and from their information I conclude, that a pillar of water of 50 palms high is somewhat heavier than a pillar of air of the same base, and reaching to the top of the atmosphere."

"Thus is the phenomenon explained. The rise of the water in the pump is shown to be a particular case of the general fact in hydrostatics, that fluids in communicating vessels will stand at heights which are inversely as their densities, or that columns of equal weights are in equilibrio.

"This way of proceeding is called arguing *a priori*, or the synthetic method. It is founded on just principles; and the great progress made in the mathematical sciences, by this mode of reasoning, shows to what length it may be carried with irresistible evidence. It has long been considered as the only inlet to true knowledge; and nothing was allowed to be known with certainty which could not be demonstrated in this way to be true. Accordingly logic, or the art of reasoning, was nothing but a set of rules for successfully conducting this argument.

"Under the direction of this infallible guide, philosophy has made sure progress towards perfection, and the progress has not only been sure but great. The explanation of an appearance in nature is nothing but the arrangement of it into that general class in which it is comprehended. The class has its distinguishing mark, which, when it is found in the phenomenon, fixes it in its class, there to remain for ever an addition to our stock of knowledge. Nothing can be lost any other way but by forgetting it; and the doctrines of philosophers must be stable like the laws of nature.

"We have seen, however, that the very reverse of all this was long the case; that philosophy has but lately emerged from total darkness and ignorance; that what passed under the name of *philosophy* was nothing but systems of errors, which were termed *doctrines*, delivered with the most imposing apparatus of logical demonstration, but belied in almost every instance by experience, and affording no assistance in the application of the powers of nature to the purposes of life.

"It is allowed by all that this has been the case, in those branches of study at least which contemplate the philosophical relations of the material world, in astronomy, in mechanical philosophy, in chemistry, in physiology, in medicine, in agriculture. It is also acknowledged, that in the course of less than two centuries we have acquired much knowledge on these subjects, so much more conformable to the natural course of things, that the deductions made from it by the same rules of the synthetic method are more conformable to fact, and therefore better fitted to direct our conduct and improve our powers. It is also certain that

these philosophical systems have more stability than in ancient times; and though sometimes in part superceded, are seldom wholly exploded.

"This cannot perhaps be affirmed with equal confidence with respect to those speculations which have our *intellect* or *mental propensities* for their object. We have proceeded in the old Aristotelian method, when investigating the nature of mind. There has been a material defect in our mode of procedure, in the employment of this method of reasoning, as an inlet to truth. Philosophers have long mistaken the road of discovery, and have set out in their investigations from the point where this journey should have terminated.

"The ARISTOTELIAN logic, the syllogistic art, that art so much boasted of, as the only inlet to true knowledge, the only means of discovery, was in direct opposition to the procedure of nature, by which we acquire knowledge and discover truth. The ancient logic supposed, that all the first principles are already known, and that nothing is wanted but the application of them to particular facts. But were this true, the application of them can hardly be called a discovery; but it is false, and the fact is, that the first principles are generally the chief objects of our research, and that they have come into view only now and then as it were by accident, and never by the labours of the logician. But curiosity was awakened, and men of genius were fretted as well as disgusted with the disquisitions of the schools, which one moment raised expectations by the symmetry of composition, and the next moment blasted them by their inconsistency with experience. They saw that the best way was to begin anew, to throw away the first principles altogether, without exception, and endeavour to find out new ones, which should in every case be agreeable to fact.

"Philosophers began to reflect, that under the unnoticed tuition of nature men had acquired much useful knowledge. The exercise of the inductive principle, by which nature prompts us to infer general laws from the observation of particular facts, gives a species of logic new in the schools, but old as human nature. It is a just and rational logic; for it is founded on, and indeed is the only habitual appellation of, this maxim, "That whatever is true with respect to every individual of a class of events, is true of the whole class." This is just the inverse of the maxim on which the Aristotelian logic proceeded.

"This new logic, therefore, or the logic of induction, must not be considered as subordinate to the old, or founded on it. See LOGIC, Part III. Sect. 5. It was not till within these two centuries that the increasing demand for practical knowledge, particularly in the arts, made inquisitive men see how useless and insufficient was the learning of the schools in any road of investigation which was connected with life and business; and observe, that society had received useful information chiefly from persons actually engaged in the arts which the speculatists were endeavouring to illustrate; and that this knowledge consisted chiefly of experiments and observations, the only contributions which their authors could make to science.

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"The *Novum Organum* of BACON, (say our learned authors,) which points out the true method of forming a body of real and useful knowledge, namely, the study of nature in the way of description, observation, and experiment, is undoubtedly the noblest present that science ever received. It may be considered as the grammar of nature's language, and is a counter part to the logic of Aristotle. As the logic of Aristotle had its rules, so has the Baconian or inductive; and the *Novum Organum Scientiarum* contains them all. The chief rule, and indeed the rule from which all the rest are derived, is, that "the induction of particulars must be carried as far as the general affirmation which is deduced from them." If this be not attended to, the mind of man, which, from his earliest years, shows great eagerness in searching for first principles, will be apt to ascribe to the operation of a general principle events which are merely accidental. Hence the popular belief in omens, palmistry, and all kinds of superstition.

"This rule has evidently given a new turn to the whole track of philosophical investigation. To discover first principles, we must make extensive and accurate observations, so as to have copious inductions of facts, that we may not be deceived as to the extent of the principle inferred from them. We must extend our acquaintance with the phenomena, paying a minute attention to what is going on all around us; and we must study nature, not shut up in our closet, drawing the picture from our own fancy, but in the world, copying our lines from her own features. To delineate human nature, we must see how men act. To give the philosophy of the material world, we must notice its phenomena.

"This method of studying nature has been prosecuted during these two last centuries with great eagerness and success. Philosophers have made accurate observations of facts, and copious collection of them. Men of genius have discovered many general powers both of mind and body; and resemblances among these have suggested powers still more general. By these efforts investigation became familiar; hypotheses were banished, and nothing was admitted as a principle which was not inferred from the most evident inductions. Conclusions from such principles became every day more conformable to experience. Mistakes sometimes happened; but recourse being had to more accurate observation or more certain induction, the mistakes were corrected. In the present study of nature, our steps are more slow, hesitating and painful; our conclusions are more limited and modest; but our discoveries are more certain and progressive, and the results are more applicable to the purposes of life. This pre-eminence of modern philosophy over the ancient is seen in every path of inquiry. It was first remarkable in the study of the material world; and there it still continues to be most conspicuous. But it is no less to be seen in the later performances of philosophers in metaphysics, pneumatology, and ethics, where the mode of investigation by analysis and experiment has been greatly adopted; and this has restored philosophers to

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the world, and to society. They are no longer to be found only in the academies of the sophists and the cloisters of a convent, but in the discharge of public and private duty.

"After saying so much on the nature of the employment, and the mode of procedure, it requires no deep penetration to perceive the value of the philosophical character. If there is a propensity in the human mind which distinguishes us from the inferior orders of sentient beings, a propensity which alone may be taken for the characteristic of the species, and of which no trace is to be found in any other, it is disinterested intellectual curiosity, a love of discovery for its own sake, independent of all its advantages.

"We think highly, and with justice, of our rational powers; but we may carry this too far. To every man who enjoys the cheering thought of living under the care of a wise Creator, this boasted prerogative will be viewed with modesty and diffidence; and he has given marks of the rank in which he esteems the rational powers of man. In no case of essential importance, of indispensable necessity, to our well being or our existence, has he left man to the care of his *reason* alone.

"God has not trusted either the preservation of the individual, or the continuance of the race, to man's opinion of the importance of the task, but has committed them to the surer guards of hunger and of sexual desire. In like manner, he has not left the improvement of his noblest work, the intellectual powers of the soul of man, to his own discovery how important it is to his comfort, that he be thoroughly acquainted with the objects around him. No: he has committed this to the sure hand of curiosity; and he has made this so strong in a few superior souls, whom he has appointed to give light and knowledge to the whole species, as to abstract them from all other pursuits, and to engage them in intellectual research, with an ardour which no attainment can ever quench, but, on the contrary, inflames it the more by every draught of knowledge."

The wisdom and goodness of the Creator appear equally in his beneficence. Human life is a scene filled with enjoyment; and the soul of man is stored with propensities and powers which have *pleasure, in direct terms*, for their object. Not to expatiate on the great variety of corporeal pleasures, which the present state of human existence affords, man has improved this anxious desire of the knowledge of the objects around him, so as to derive from them not only the means of subsistence and comfort, but the most elegant and pleasing of all gratifications, the accumulation of **INTELLECTUAL KNOWLEDGE**, independent of all consideration of its advantages. It is therefore not only lawful but highly commendable, in such as possess the means of intellectual improvement, without relinquishing the indispensable social duties, to push this advantage as far as it will go: and in all ages and countries, it has been considered as forming the greatest distinction between men of easy fortune and the majority of the inferior ranks, who must procure their own support, while they contribute to the good of the community, by their manual labour. The pleasure

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beian must learn to *work*, the gentleman must learn to *think*; and nothing can be a surer mark of a *grovelling soul* than for a man of fortune to have an uncultivated mind.

"Let us then cherish to the utmost this distinguishing propensity of the human soul; but let us do even this like philosophers. Let us cultivate it as it is; as the handmaid to the arts and duties of life; as the guide to something yet more excellent. A character is not to be estimated from what the person knows, but from what he can perform. The accumulation of intellectual knowledge is too apt to create an inordinate appetite for it; and the man habituated to speculation, to become like the miser, too apt to place that pleasure in the mere *possession*, which he ought to look for only or chiefly in the *judicious use* of his favourite object."

To conclude, in the words of our learned authors, The "solid advantages which philosophy is able to bestow are great. To enumerate and describe them all would be to write a volume. We may take notice of one, which is an obvious consequence of that simple view which we have given of the object; and this is, a modest opinion of our attainments. *Appearances* are all that we know; *causes* are for ever hid from our view; the powers of our nature cannot reach them. Let us, therefore, relinquish all pursuits which propose *ultimate principles* for objects of examination. Let us attend to the subordination of things, which it is our great business to explore. Among these there is such a subordination as that of means to ends, and of instruments to an operation. All will acknowledge the absurdity of examining light with a microscope. It is equally absurd for us to examine the nature of knowledge, of truth, of infinite wisdom, by our intellectual powers. We have a wide field of accessible knowledge in the works of God; and one of the greatest advantages, and of the most sublime pleasures, which we can derive from the contemplation, is the view which a judicious philosophical research will most infallibly give us of a world, not consisting of a number of detached objects, connected only by the fleeting tie of coexistence, but an *universe*, a *system* of beings, all connected together by causation, with innumerable degrees of subordination and subserviency, and all co-operating in the production of one great and glorious purpose. The heart which has but a spark of sensibility must be warmed by such a prospect, must be pleased to find itself an important part of this stupendous machine; and cannot but adore the incomprehensible Artificer who contrived, created, and directs the whole.

"PHILOSOPHICAL DISQUISITION will exhibit these general laws of the universe, that wonderful concatenation and adjustment of every thing both material and intellectual, is the most striking instance of incomprehensible wisdom; which, by means so few and so simple, can produce effects which by their grandeur dazzle our imagination, and by their multiplicity elude all possibility of enumeration. Of all the obstacles which the weakness, the folly, or the vanity of men, have thrown in the way of the theologian, there is none so fatal, so hostile to all his endeavours, as a cold

and comfortless system of MATERIALISM, which the reasoning pride of man first engendered, which made a figure among a few speculatists in the 17th century, but was soon forgotten by the philosophers really busy with the observation of nature and of nature's God. It has of late reared up its head, being cherished by all who wish to get rid of the stings of remorse, as the only opinion compatible with the peace of the licentious and the sensual. In vain will the divine attempt to lay this devil with the metaphysical exorcism of the schools; it is philosophy alone that can detect the cheat. Philosophy singles out the characteristic phenomena which distinguish every substance; and philosophy never will hesitate to conclude, that there is one set of phenomena which characterize *mind*, and another which characterize *body*, and that these are *two* *calcs* different. Continually appealing to fact, to the phenomena, for our knowledge of every cause, we shall have no difficulty in deciding, that thought, memory, volition, joy, hope, are not compatible attributes with bulk, weight, elasticity, fluidity. *Tuta sub igitur Pallas*; philosophy will maintain the dignity of human nature, will detect the sophisms of the materialists, confute their arguments, and restore to the countenance of nature that ineffable beauty of which those would deprive her, who would take away the SUPREME MIND which shines from within, and gives life and expression to every feature."

PART II.

OF EXPERIMENTAL PHILOSOPHY.

EXPERIMENTAL PHILOSOPHY is that which has its foundation in experience, wherein nothing is assumed as a truth but what is founded upon ocular demonstration, or which cannot be denied without violating the common sense and perceptions of all mankind. It proceeds entirely on experiments; deduces the laws of nature, and the powers and properties of bodies, with their effects on each other, from experiments and observations.

In former times philosophers, when reasoning about natural things, instead of following this method, assumed such principles as they imagined sufficient for explaining the phenomena, without considering whether these principles were just or not. Hence for a great number of ages no progress was made in science; but systems were heaped upon systems, having neither consistency with one another nor with themselves. No proper explanations indeed were given of any thing; for all these systems, when narrowly examined, were found to consist merely in changes of words, which were often very absurd and barbarous.

The first who deviated from this method of philosophizing was FRIAR BACON, who lived in the 16th century, and who spent £2000 (an immense sum in those days) in making experiments. The admirable CHRICTON, who flourished about the year 1580, not only disputed against the philosophy of ARISTOTLE, which had for so long been in vogue, but wrote a book against it. Contemporary with this celebrated personage was FRANCIS BACON, lord chancellor of England, who is looked upon to be the founder of the present mode of philosophizing.

philosophising by experiment. But though others might lay the foundation, Sir ISAAC NEWTON is justly allowed to have brought this kind of philosophy to perfection; and to him we are certainly indebted for the greatest part of it. Unfortunately, however, neither Lord VERULAM nor Sir Isaac Newton had an opportunity of knowing many important facts relating to the principles of FIRE and ELECTRICITY, which have since been brought to light. Hence all their philosophy was merely mechanical, or derived from the visible operations of solid bodies, or of the grosser fluids upon one another. In such cases therefore, where the more subtle and active fluids were concerned, they fell into mistakes, or were obliged to deny the existence of the principles altogether, or make use of terms which were equally unintelligible and incapable of conveying any information with those of their predecessors. A remarkable instance of the errors into which they were thus betrayed, we have in the doctrine of projectiles, where the most enormous deviations from truth were sanctified by the greatest names of the 17th century, merely by reasoning from the resistance of the air to bodies moving slowly and visibly, to its resistance to the same bodies when moved with high degrees of velocity. (See PROJECTILES.) In other cases they were reduced to make use of words to express immaterial powers, as attraction, repulsion, refraction, &c. which have since tended in no small degree to embarrass and confound science by the disputes that have taken place concerning them. The foundations of the present system of experimental philosophy are as follows:

I. All the material substances of which the universe is composed are called *natural bodies*. What we perceive uniform and invariable in these substances we call their *properties*. Some of these are general and common to all matter, as *EXTENSION*; others are proper to particular substances, for instance *FLUIDITY*; while some appear to be compounded of the general and particular properties, and thus belong to a still smaller number; as the properties of air, which are derived from the general property of extension combined with those of fluidity, elasticity, &c.

II. In taking a particular review of the properties of bodies, we naturally begin with that of *EXTENSION*. This manifests itself by the three dimensions of length, breadth, and thickness. Hence proceeds the divisibility of matter, which the present system supposes to reach even to infinity; but though this proposition be supported by mathematical demonstrations, it is impossible we can either have any distinct idea of it, or of the opposite doctrine, which teaches that matter is composed of excessively minute particles called *atoms*, which cannot be divided into smaller ones. The subtilty indeed to which solid bodies may be reduced by mechanical means is very surprising; and in some cases is so great, that we might be tempted to suppose that a farther division is impossible. Thus, in grinding a speculum, the inequalities of its surface are so effectually worn off, that the whole becomes in a certain degree invisible, showing not itself by the light which falls upon it, but the image of other bodies; but the smallest

scratch which disturbs the equality of the surface is at once distinctly visible.

III. From the arrangement of these ultimate particles of matter, whatever we suppose them to be, arise the various figures of bodies; and hence *figure* is a property of all bodies no less universal than extension, unless we speak of the ultimate particles of matter, which, as they are supposed to be destitute of *parts*, must consequently be equally destitute of *figure*; and the same consequence will follow whether we adopt this supposition or the other. The figures of bodies are so extremely various and dissimilar, that it is impossible to find any two perfectly alike. It is indeed the next thing to impossible to find two in which the dissimilarity may not be perceived by the naked eye; but if any such should be found, the microscope will quickly discover the imbecility of our senses in this respect. Solidity is another property essential to all matter. By this we mean that property which one quantity of matter has of excluding all other from the space which itself occupies at that time. Hence arises what we call *RESISTANCE*, which is always an indication of solidity; and no less so in those bodies which we call *fluid* than in those which are the most solid. This may at first seem to be a contradiction; but fluids yield only when they can get away from the pressure; in all other cases they resist as violently as the most solid bodies. Thus water confined in a tube will as effectually resist the impression of a piston thrust down upon it as though it were the most solid substance. Air indeed will yield for a certain time; but this, as appears from several experiments, is entirely owing to a more subtle fluid, viz. that of elementary fire being pressed out from among its particles. As long as this fluid can be forced out, either from among the particles of air, water, or any other more gross fluid substance, the latter will be found compressible, as a heap of wet sand would be by squeezing the water out from it; but when we come to the most subtle of all elements, such as we suppose that of fire to be, there cannot be any possibility of compressing it, even though we had a vessel so close as to prevent it from escaping through its sides; because its parts are already as near each other as they can be.

IV. The distance of the parts of bodies from each other is called their *POROSITY*, and was formerly supposed to be owing to a vacuum interspersed between them; but now it is generally allowed that the pores of solid bodies as well as of fluids are filled with an extremely subtle matter which pervades all nature. The porosity of bodies with regard to one another, may be thus explained. Wood, or a sponge, is porous with regard to water; but water itself is porous with regard to air, which it absorbs in considerable quantity. Both air and water are porous with regard to the element of fire, which produces very considerable changes upon them, according to the quantity of it they contain, or the manner it acts in their pores. This element itself, however, is not porous with regard to any other substance. Its pores, therefore, if it has any, must be absolute vacancies destitute of any matter whatever. Vacuities of this kind indeed are supposed to be absolutely necessary to motion: for though we

may say, matter being divisible almost *ad infinitum*, that a body or substance more solid, may move in another substance that is more subtle, and that will give way to its motion, we must nevertheless have recourse to a last resort, and admit of an ultimate vacuum, which will give room sufficient to the least corpuscle, that its part *A* may take the place of its part *B* without the least resistance: besides, it is not to be imagined, that nature, in fact, admits of that infinite divisibility which our imagination can conceive, and that every thing, which is possible in idea, is at all times practicable. All that *exists* is possible, but all that is *possible* does not however exist. By DENSITY, is understood the proportion between the extension and solidity of a body: one body therefore is more dense than another, when, under the same degree of extension, it contains more solid matter: and this quality arises from condensation and compression. ELASTICITY is nothing more than that effort by which certain bodies, when compressed, endeavour to restore themselves to their former state; and this property supposes them compressible. As all these natural properties of bodies are of great utility in explaining the principles of physics, and in applying them to all the arts, experimental philosophy proves their reality by a thousand examples.

V. We discover still other properties in bodies; such as MOBILITY, which we must not here confound with motion. This mobility arises from certain dispositions which are not in an equal degree in all bodies: whence it comes that some are more easily moved than others: and this proceeds from the resistance to motion which is perceived in all bodies having regard merely to their masses; and this resistance is called *VIS INERTIE*, or *inert force*. A body is said to be in motion, when it is actually moving from one place to another; or, whenever a body changes its situation with regard to the objects that surround it, either nearly or remotely, it is said to be in motion. There are three principal matters to be considered in a moving body; its direction, its velocity, and the quantity of its motion: and here physics explains the force of moving power; it likewise distinguishes between simple and compound motion. *Simple motion* is that which arises from only one force, or which tends to only one point. It describes the laws, and explains the resistance of mediums; the resistance of friction; the difficulties of a perpetual motion; the alteration of direction occasioned by the opposition of a fluid matter; reflected or reverberated motion; the communication of motion by the shock of bodies, &c. *Compound motion* is that of a body impelled to move by several causes or powers which act according to their different directions. Physics here likewise investigates the laws of motion; and is particularly applied to the explaining, under this head, what are called the *central forces*, which produce a motion that is either circular or in a curve line, and which incessantly urge the moving body either to approach or recede from the centre. To distinguish these from each other, the former is called the *centripetal force*, and the latter the *centrifugal force*.

VI. The powers of ATTRACTION and REPULSION seem to be common to all matter, and the

component parts of all substances are kept in their places by the due balance of these opposite powers. If, by any means, the particles of any substance be removed beyond their sphere of mutual attraction, they repel one another, as those of water when it becomes steam. Of the different kinds of attraction, that of GRAVITATION seems to extend to the greatest possible distance; but that which keeps together the parts of the same substance, thence called the *attraction of cohesion*, and the different kinds of chemical attractions, called *affinities*, only act at a small distance. Of the causes of these attractions we are entirely ignorant. See ATTRACTION.

VII. BY GRAVITY, or PONDEROSITY, is to be understood that force which occasions bodies to pass from a higher to a lower place, when nothing opposes their course, or when the obstacles are not sufficient to stop them. Speculative philosophy investigates its cause, and perhaps in vain. Experimental philosophy contents itself with describing the phenomena, and teaching the laws of gravity, which are thoroughly established by a thousand reiterated experiments. In order properly to understand this subject, we must take care not to confound the term *gravity* with that of *weight*. By the former, we understand that force which urges bodies to descend through a certain space in a given time. By the latter, is meant the quantity of a heavy body that is contained under the same bulk. The phenomena are explained by the experiments themselves, and by inferences deduced from them.

VIII. HYDROSTATICS is a science of which the object is the gravity and equilibrium of fluids in particular. Though the gravity of these bodies is the same with that of others, and is subject to the same laws, yet their state of fluidity gives rise to particular phenomena, which it is of consequence to know. But as hydrostatics cannot be successfully treated on without the assistance of calculation, it has been ranked among the mathematical sciences. See HYDROSTATICS.

IX. We say the same with regard to MECHANICS; which is the art of employing, by the aid of machines, the motion of bodies, in conformity to its properties and laws, as well with regard to solids as fluids, either more commodiously or more advantageously.

X. After it has made the most accurate experiments, and the most judicious observations, on all these different subjects, and the properties of bodies in particular. Experimental Philosophy passes to the examination of the air, the water, fire, the wind, colours, &c. The air is a fluid with which we are surrounded from the instant of our birth, and without which we cannot exist. It is by the properties and the influences of the air, that nature gives increase and perfection to all that it produces for our wants and conveniences; it is the spirit of navigation: sound, voice, speech itself, are nothing more than percussions of the air: this globe that we inhabit is completely surrounded by air; and this kind of coverture, which is commonly called the ATMOSPHERE, has such remarkable functions, that it evidently appears to concur to the mechanism of nature. Experimental physics, therefore, considers the air,

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1. Of itself, independent of its bulk, and the figure of its whole body: it examines its essential properties; as its gravity, density, spring, &c. The air-pump is here of indispensable use; and by this machine physics examines in what manner space, or a vacuum, is made. It likewise shows the necessity of air to the preservation of animal life; the effect it has on sound, fire, and gunpowder, in *vacuo*; and a hundred other experiments of various degrees of curiosity. 2. It considers the air as the terrestrial atmosphere, sometimes as a fluid at rest, and sometimes as in motion. And by these means it accounts for the variation of the mercury in the barometer, and why it sinks in proportion as the height of the atmosphere diminishes; as also for the figure, the extent, and weight of the atmosphere: it shows the method of determining the height of mountains, the nature of sound in general, of its propagation, and of sonorous bodies. The late discoveries of Dr Priestley and others have added a new and very considerable branch to experimental philosophy in this respect. See AEROLOGY.

XI. It is here also, that experimental philosophy considers the nature of the WIND; which is nothing more than agitated air, a portion of the atmosphere that moves like a current, with a certain velocity and determinate direction. This fluid, with regard to its direction, takes different names according to the different points of the horizon, from whence it comes, as east, west, north, and south. Winds are likewise distinguished into three sorts; one of which is called *general* or *constant*, as the trade winds which continually blow between the tropics; another is the *periodical*, which always begin and end within a certain time of the year, or a certain hour of the day, as the monsoons, the land breezes, and sea breezes, which arise constantly in the morning and evening; and lastly, such as are *variable*, as well with regard to their direction as their velocity and duration. M. Mariotte computes the velocity of the most impetuous wind to be at the rate of 32 feet in a second, and Mr Derham makes it 66 feet in the same time. The first, doubtless, meant the wind of the greatest velocity that had then come to his knowledge. The invention of aerostatic machines has tended more to show the real velocity of the wind than any other invention yet made public: but all of them move slower than the aerial current; so that the real velocity of the wind remains yet undetermined.

XII. The force of the wind, like that of other bodies, depends on its *VELOCITY* and *MASS*; that is, the quantity of air which is in motion: so the same wind has more or less force on any obstacle that opposes it, in proportion as that obstacle presents a greater or a less surface: for which reason it is, that they spread the sails of a vessel more or less, and place the winds of a wind-mill in different directions. The machines by which the winds are measured, are called ANEMOMETERS. They show the direction, the velocity, and the duration of winds. It is by the agitations of the wind that the air is purified; that the seeds of trees and herbs are conveyed through the forests and fields; that ships are driven from one pole to the other; that our mills turn upon their

axes, &c.; and art, by imitating nature, sometimes procures us artificial winds, by which we refresh our bodies, invigorate our fires, purify our corn, &c.

XIII. WATER is an universal agent, which nature employs in all her productions. It may be considered as in three states, 1. As a liquid; 2. As a vapour; 3. As ice. These three different states do not in any manner changes its essence, but make it proper to answer different ends. The natural state of water would be that of a solid body, as fat, wax, and all those other bodies which are only fluid when heated to a certain degree: for water would be constantly ice, if the particles of fire, by which it is penetrated in the temperate climates, did not render it fluid, by producing a reciprocal motion among its parts; and, in a country where the cold is continually strong enough to maintain the congelation, the assistance of art is necessary to make it fluid in the same manner as we do lead, &c. Water, when not in ice, is a fluid that is insipid, transparent, without colour, and without smell, and that easily adheres to the surface of some bodies, that penetrates many, and extinguishes fire. Experimental philosophy investigates the origin of fountains; the cause of the saltiness of the sea; the means of purifying water; what is its weight, and what are its effects when heated, &c. It likewise examines this fluid in the state of vapour; and finds that a drop of water, when in vapour, occupies a space vastly greater than it did before. It explains the *AEOLIPILE* and its effects; fire engines; and the force of vapours that give motion to immense machines in mines and elsewhere, &c. and lastly, it considers water in the state of ICE. Ice consequently is more cold than water; and its coldness increases if it continue to lose that matter, already too rare, or too little active, to render it fluid. Experimental physics endeavours to investigate the causes of the congelation of water, and why ice is lighter than water; from whence it derives that expansive force by which it breaks the containing vessel; the difference there is between the congelation of rivers and that of standing waters; why ice becomes more cold by the mixture of salts; and many other similar phenomena.

XIV. The nature of FIRE is yet very much unknown to the most learned philosophers. As objects when at a great distance are not perceptible to our senses, so when we examine them too nearly, we discern them but confusedly. It is still disputed whether fire be a homogeneous, unalterable matter, designed, by its presence, or by its action, to produce heat, inflammation, and dissolution, in bodies; or if its essence consists in motion only, or in the fermentation of those particles which we call *inflammable*, and which enter as principles, in greater or less quantities, in the composition of mixed bodies. The most learned inquirers into nature incline to the former opinion; and to have recourse to a matter which they regard as the principle of fire. They suppose that there is in nature a fluid adapted to this purpose, created such from the beginning, and that nothing more is necessary than to put it in action. The numberless experiments which are daily made in electricity

tricity seems to favour this opinion, and to prove that this matter, this fluid, this elementary fire, is diffused through all nature, and in all bodies, even ice itself. We cannot say to what important knowledge this great discovery of electricity may lead if we continue our inquiries concerning it. It appears, however, that we may believe, without any inconvenience or absurdity, that fire and light, considered in their first principle, are one and the same substance differently modified. See *ELECTRICITY, Index*.

XV. Be this, however, as it may, experimental philosophy is employed in making the most ingenious and most useful researches concerning the nature of fire, its propagation, and the means by which its power may be excited or augmented; concerning the phosphorus and its inflammation; fire excited by the reflection of the sun's rays from a mirror; and on the effects of fire in general; concerning lightning and its effects; the fusion of metals; gunpowder and its explosion; flame and the elements of fire; and an infinity of like objects which it explains, or concerning which it makes new discoveries, by the aid of experiments.

XVI. By the word *LIGHT*, we understand that agent by which nature affects the eye with that lively and almost constantly pleasing sensation, which we call *seeing*, and by which we discern the size, figure, colour, and situation of objects, when at a convenient distance. All philosophers agree that the light, which is diffused in any place is a real body. But what this body is, and by what means it enters that place where it is perceived, is a question about which philosophers are divided.

XVII. Experimental philosophy is applied in discovering or proving, by an infinity of experiments, what is the nature of light, in what manner it is propagated, what are its velocity and progressive motion. It also investigates and explains the principles of optics properly so called, and shows the directions which light observes in its motions. From thence it proceeds to the examen of the principles of catoptrics, and describes the laws and effects of reflected light. It next treats of the principles of dioptrics, and explains the laws of refracted light; and lastly, it teaches, from the

principles of natural and artificial vision, the construction of optical instruments; as lenses, concave mirrors, prisms, telescopes, &c. &c. and the uses to which they are applied.

XVIII. By resolving or separating the rays of light, philosophy has obtained true and clear discoveries of the nature of colours. We are naturally led to imagine that colours, and their different degrees, make a part of the bodies that present them to our sight; that white is inherent in snow, green in leaves and grass, and red in a stuff dyed of that colour. But this is far from being true. If an object, which presents any colour to our sight, be not illuminated, it presents no colour whatsoever. In the night all is black. Colours therefore depend on light; for without that we could form no idea of them: but they depend also on bodies; for of several objects presented to the same light, some appear white, others red, blue, &c. But all these matters being separate from our own bodies, we should never acquire any ideas of them, if the light transmitted or reflected by these objects did not make them sensible to us, by striking upon the organs of our sight, and if these impressions did not revive in us those ideas which we have been used to express by certain terms. For these reasons philosophy considers colours from three points of view: 1. As in the light; 2. In bodies, as being coloured; and, 3. From the relation they have to our visual faculties, which they particularly affect, and by which we are enabled to distinguish them.

It is unnecessary in this place to say more either on colour in particular, or experimental philosophy in general. The different subjects of this collective article are particularly treated under their proper names, in the order of the alphabet: the reader will therefore turn, as he has occasion, to *ACOUSTICS, CATOPTICS, CHROMATICS, DIOPTRICS, HYDROSTATICS, MECHANICS, OPTICS, PNEUMATICS, ELECTRICITY, MAGNETISM, &c. &c. &c.* Also *AEROLOGY, AEROSTATION, ATMOSPHERE, BURNING-GLASS, COLD, COLOUR, CONGELATION, EVAPORATION, FIRE, FLAME, FLUIDITY, HEAT, IGNITION, LIGHT, SOUND, STEAM, WATER, WIND, &c.*

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PHILOSOPHY has been distinguished by different epithets; partly from its subjects, and partly from its teachers: as,

1. PHILOSOPHY, ARISTOTELIAN. See *ARISTOTELIANS, ARISTOTLE*, § 3, and *PHILOSOPHY, Sec. I.*

2. PHILOSOPHY, CARTESIAN. See *ASTRONOMY, Index*, and *CARTESIANS*.

3. PHILOSOPHY, CRITICAL, a name given to a new System of Science, (if indeed it may be so styled, founded by *Immanuel Kant*, regius professor of Logic and Metaphysics, in the university of Koenigsberg. This system, it is said, is very much admired in Germany, though for what, we are very much at a loss to discover. "To explain the philosophy of Kant," says a learned

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foreigner, who describes it in the *Supp.* to the *Enc. Brit.*) "in all its details, would require a long and painful study, without producing any real advantage to the reader. The language of the author is equally obscure, and his reasonings equally subtle, with those of the commentators of Aristotle in the 15th century." "The source of this obscurity (says Dr Gleig) is sufficiently obvious. Besides employing a vast number of words of his own invention, derived from the Greek, Kant uses expressions which have been long familiar to metaphysicians, in a sense different from that in which they are generally received; and hence a large portion of time is requisite to enable the most sagacious mind to ascertain with precision the import of his phraseology. The difficulty

difficulty of comprehending this philosophy has contributed more than anything else, to bring it into vogue, and to raise the fame of its author."

"Kant divides all our knowledge into that which is *a priori*, and that which is *a posteriori*. Knowledge *a priori* is conferred upon us by Nature. Knowledge *a posteriori* is derived from our sensations, or from experience, and is by our author denominated *empyric*. One would be induced, by this account to believe, that Kant intended to revive the system of *innate ideas*; but such is not his system. He considers all our knowledge as acquired. He maintains that experience is the *occasional cause*, or *productrice* of all our knowledge, and that without it we could not have a single idea. Our ideas *a priori*, he says, are produced *with* experience, but they are not produced *by* it, or do not proceed from it. They exist in the mind; they are the *forms* of the mind.—*Time* and *space* are two essential forms of the mind.—*Extension* is nothing real but as the *form* of our sensations.—*Arithmetic* is derived from the form of our internal sense, and *Geometry* from that of our external. Our understanding collects the ideas received by the impressions made on our organs of sense, confers on these ideas *unity* by a particular force *a priori*; and thereby forms the representation of each object. Thus, a man is successively struck with the impressions, of all the parts, which form a particular garden. His understanding unites these impressions, or the ideas resulting from them; and in the unity produced by that *unifying* act, it acquires the idea of the garden. If the objects, which produce the impressions, afford also the *matter* of the ideas, then the ideas are *empyric*; but if the objects only unfold the *forms* of the thought, the ideas are *a priori*." "The writings of Kant are multifarious. The work entitled, *The Critique of Pure Reason*, is divided into several sections, under the ridiculous titles of *Æsthetic transcendental*; of *Transcendental Logic*; of the pure ideas of the understanding; of the transcendental judgment; of the *paralogism* of pure reason; of the ideal transcendental; of the criticism of speculative theologies; of the discipline of pure reason," &c. Such is the wonderful jargon of literary nonsense, which of late has attracted the attention of the literati in Germany. Our readers, we are persuaded, will think we have given a sufficient specimen of our professor's Critical Philosophy. We shall therefore conclude with a very short specimen of his *theological and moral philosophy*. After arguing, that "The proofs of natural theology, taken from the order and beauty of the universe, &c. are proofs only in *appearance*;—that it is impossible to know that God exists," and that "the proof of a God is nothing more than the *persuasion*, that happiness is connected with virtue by a Being upon whom nature depends;" he makes the following singular remarks upon oaths: "As it would be absurd to swear, that God exists, it is still a question to be determined, whether an oath would be possible and obligatory, if one were to make it thus:—*I swear on the supposition, that God exists*. It is extremely probable, (adds he,) that all *sincere* oaths, taken with *reflection*, have been taken in no other sense!"—Dr Gleig concludes his account

of Kant's extraordinary system, with the following summary of his moral principles: "Kant seems to contend, that the actions of men should be directed to *no end* whatever; for he expressly condemns, as an *end of action*, the pursuit either of our own happiness, or of the happiness of others, whether temporal or eternal; but actions performed for no purpose are surely indications of the very essence of folly. Such actions are indeed impossible to beings endowed with reason, passions, and appetites; for if there be that beauty in *virtue* for which Kant and the stoics contend, it cannot be, but that the virtuous man must feel an internal pleasure, when he performs a virtuous action, or reflects upon his past conduct." On the whole, professor Kant's system of Critical Philosophy affords an additional evidence to the many which modern philosophy affords, of the truth of Cicero's remark, "That there is nothing so absurd, but what has been advanced by some philosopher or other."

4. PHILOSOPHY, EXPERIMENTAL. See PHILOSOPHY, Part II.

5. PHILOSOPHY, LEIBNITZIAN. See LEIBNITZIAN PHILOSOPHY.

6. PHILOSOPHY, MORAL. See MORAL PHILOSOPHY.

7. PHILOSOPHY, NATURAL. See NATURAL HISTORY, NATURAL PHILOSOPHY, PHILOSOPHY, and PHYSICS.

PHILOSTORGIUS, an ecclesiastical historian of the 4th century, born in Cappadocia, who wrote an abridgment of ecclesiastical history, in which he treats Athanasius with some severity. This work contains many curious and interesting particulars. The best edition is that of Henry de Valois in Greek and Latin. There is also attributed to him a book against Porphyry.

(1.) PHILOSTRATUS, Flavius, an ancient Greek author, who flourished between A. D. 190 and 244. He wrote *The Life of Apollonius Tyaneus*, and some other tracts still extant. Eusebius calls him an Athenian, because he taught at Athens; but Eunapius and Suidas always speak of him as a Lemnian; and he himself hints as much in his *Life of Apollonius*. He frequented the schools of the sophists, particularly Damianus of Ephesus, Proclus Naucratis, and Hippodromus of Larissa. He was one of those learned men whom the philosophic empress Julia Augusta, wife of Severus, had continually about her. By her command he wrote the *Life of Apollonius*, as he himself informs us. Suidas and Helychius say that he was a teacher of rhetoric, first at Athens, and then at Rome, from the reign of Severus to that of Philip, who obtained the empire in 244. Philostratus's *Life of Apollonius* has erroneously been attributed to Lucian, because it has been printed with some of that author's pieces. Philostratus endeavours, as Cyril observes, to represent Apollonius as a wonderful and extraordinary person. (See APOLLONIUS, N° 3.) The sophistical and affected style of Philostratus, the sources whence his materials have been drawn, and the absurdities and contradictions with which he abounds, plainly show his history to be nothing but a collection of fables. His works, however, have engaged the attention of critics of the first class.

class. A very exact and beautiful edition was published at Leipzig, 1709, in folio, by Olearius, professor of Greek and Latin. A translation into English was published by Blount. (See BLOUNT; N° 1.) At the end of Apollonius's Life there are 95 letters which go under his name. They are not, however, believed to be his; the style being very affected, and they bear all the marks of a forgery. Some of them, though it is not easy to determine which, were written by his nephew, (See N° 2.) as were also the last 18 in the book of images. This is the reason why the title runs not *Philostati*, but *Philostatorum quæ supersunt omnia*.

(2-4.) PHILOSTRATUS, nephew of the preceding, flourished in the reign of Heliogabalus, and wrote an *Account of the Lives of the Sophists*, which is extant, and contains many particulars which are to be met with no where else. There were other two *Philostati*, both philosophers, who flourished, the one under Augustus, the other under Nero.

PHILOTAS, the name of two generals, who fought under Alexander the Great. To one of them Cilicia was allotted, on his death. (See MACEDON, § 16.) A 3d, who also fought bravely under Alexander, was the son of Parmenio; but was put to death for conspiring against that monarch; A. A. C. 330. *Plut. Q. Curt.* vi. 11.

PHILOTIS, a servant maid at Rome, who saved her countrymen from destruction. After the siege of Rome by the Gauls, the Fidenates assembled an army, and marched against the capital, demanding all the wives and daughters in the city as the only conditions of peace. The demand astonished the senators; and when they refused to comply, Philotis advised them to send all their female slaves disguised in matron's clothes, and she offered to march herself at their head. Her advice was followed: and when the Fidenates had feasted late in the evening, and were quite intoxicated and fallen asleep, Philotis lighted a torch as a signal for her countrymen to attack the enemy. The whole was successful; the Fidenates were conquered; and the senate, to reward the fidelity of the female slaves, permitted them to appear in the dress of the Roman matrons.

(1.) PHILOXENUS, a dithyrambic poet of Cythera. He enjoyed the favour of Dionysius tyrant of Sicily for some time, till he offended him by seducing one of his female fingers. During his confinement he wrote an allegorical poem, called *Cyclops*; in which he delineated the character of the tyrant under the name of *Polyphemus*, and represented his mistress under that of *Gulatea*, and himself under that of *Ulysses*. The tyrant, who was fond of poetry and applause, liberated Philoxenus; but the poet refused to purchase his liberty by saying things unworthy of himself, and applauding the wretched verses of Dionysius, and therefore he was sent to the quarries. Being set at liberty, he some time after was asked his opinion at a feast about some verses which Dionysius had just repeated, and which the courtiers had received with the greatest applause. Philoxenus gave no answer, but he ordered the guards that surrounded the tyrant's table to take him back to the quarries. Dionysius was pleased with his hu-

mour and with his firmness, and forgave him. Philoxenus died at Ephesus about A. A. C. 380.

(2; 3.) PHILOXENUS, 1. an officer of Alexander, who received Cilicia at the general division of the provinces. He seems to be confounded with PHILOTAS. 2. A son of Ptolemy, who was given to Pelopidas as a hostage.

PHILIP, James, Esq. of Greenlaw, a late eminent Scottish lawyer, born at Greenlaw, in the parish of Glencroft, in Mid Lothian, and educated under Heineccius, Vitriarius, and other eminent civilians in Germany and Holland. Soon after his return from abroad, he was appointed Judge of the High Court of Admiralty, an office which he executed with honour to himself and advantage to his country. He was remarkable for mildness and urbanity, yet no less so for inflexible rectitude. An instance of his spirit is recorded in Sir J. Sinclair's *Stat. Account*. Vol. XV. p. 444. wherein, in a case of an apprentice enlisting on board the Sea-Horse, he imprisoned Captain Palliser (afterwards Admiral Sir Hugh) for refusing to deliver up the boy; for which Philip received the public approbation of Lord Chancellor Hardwicke, in 1754.

(1.) * PHILTER. *n. f.* [φίλτρον; *philtre*, French.] Something to cause love.—

The melting kisses that slip
The jellied *philtre* of her lips. *Cleveland.*
You need not fear a *philter* in the draught. *Dryden.*

—A *philter* that has neither drug nor enchantment in it. *Addison.*

(2.) PHILTRE is derived from the Greek, φιλτρον, *I love*, or φιλος, *a lover*. Philters are distinguished into *true* and *spurious*, and were given by the Greeks and Romans to excite love. (See LOVE, § 5.) The spurious are spells or charms, supposed to have an effect beyond the ordinary laws of nature by some magic virtue; such are those said to be given by old women, witches, &c.—The true philters are those supposed to work their effect by some natural and magnetical power. Many grave authors have believed the reality of these philters, and alleged facts in confirmation of their sentiments; among the rest, VAN HELMONT. But all philters, whatever facts may be alleged, are mere chimeras.

(3.) PHILTER, or PHILTRE, [*Philtrum*], in pharmacy. &c. a strainer.

* To PHILTER. *v. a.* [from the noun.] To charm to love.—Let not those that have repudiated the more inviting sins, shew themselves *philtered* and bewitched by this. *Gov. of Tongue.*

PHILYCA, in botany. See PHYLICA.

PHILYPEAUX. See PHILIPPEAUX.

PHILYRA, in fabulous history, one of the Oceanides, whom Saturn met in Thrace. The god, to escape from the vigilance of Rhea, changed himself into a horse, to enjoy the company of Philyra, by whom he had a son, half a man and half a horse, called CHIRON. Philyra was so ashamed of giving birth to such a monster, that the entreated the gods to change her nature. She was accordingly metamorphosed into a tree, called by her name among the Greeks.

PHILYRES, an ancient people, near Pontus.

PHILYRIDES, a name of CHIRON.

PHIMOSIS,

PHIMOSIS, or rather **PHYMOSIS**. See **MEDICINE**, and **SURGERY**, *Indexes*.

PHINEAS, or } or, as the Jews pronounce it, **PHINEHAS**, } **PINCHAS**, the son of Eleazar, and grandson of Aaron. He was the third high priest of the Jews, and discharged this office from A. M. 2571 till 2590. He is particularly commended in Scripture for the zeal he shewed for the preservation of his countrymen from idolatry, on two different occasions; as recorded in Num. 25: 7—15, and Josh. xxii. 13—34. The just vengeance he executed on Zimri, a prince of Simeon, and Cozbi, a princess of Midian, happened A. M. 2553. The dignity of the high priesthood continued in the race of Phinehas, from AARON down to the high-priest ELI, for about 335 years; when it was forfeited by the wickedness of Eli's sons. It returned, however, again into the family of Eleazar in the reign of Saul, who, having killed Abimelech, and the other priests and people of Nob (see **DOG**), gave the high priesthood to Zadok, of the race of Phinehas. At the same time David had Abiathar with him, of the race of Eli, who performed the functions of high priest. So that, after the death of Saul, David continued the priesthood to Zadok and Abiathar conjointly. But, towards the end of David's reign, Abiathar having joined in the conspiracy of ADONIJAH, to the prejudice of Solomon, he was disgraced, and Zadok only was acknowledged as high priest. The priesthood continued in his family till after the captivity of Babylon, and even to the destruction of the temple. But, from the beginning of Zadok's priesthood alone, and the exclusion of Abiathar, to the ruin of the temple, is 1084 years. As Phinehas lived after the death of Joshua, and before the first servitude under Cushan-rishathaim, during the republic, (Judges xvii. 6. xviii. 1. xxi. 24.) his death is supposed to have happened A. M. 2590. It was under his pontificate that the robbery of Micah happened; that the tribe of Dan made a conquest of Laish; and the enormity was committed upon the wife of the Levite. (Judges xx. 28.) Phinehas's successor in the high priesthood was Abiezer, or Abisluah. The Rabbins allow a very long life to Phinehas. Some say he lived to the time of the high priest Eli, or even to that of Samson.

PHINEUS, in fabulous history, was son of Agenor, king of Phœnicia, or, according to some, of Neptune. He became king of Thrace, or Bithynia. He married Cleopatra or Cleobula, the daughter of Boreas, by whom he had Plexippus and Pandion. After her death, he married Idæa or Idothæa, the daughter of Dardanus. Idæa, jealous of his former wife's children, accused them of attempts upon their father's life and crown, or, as others assert, of attempts upon her virtue; on which they were condemned by Phineus to be deprived of their eyes. This cruelty was soon after punished by the gods; for Phineus suddenly became blind, and the Harpies were sent by Jupiter to keep him in continual alarm, and to spoil the meats on his table. He was afterwards delivered from these monsters by his brothers-in-law Zetes and Calais, who purified them as far as the Strophades. He likewise recovered his sight by means of the Argonauts, whom he had received with

great hospitality, and whom he instructed in the easiest and speediest way of arriving in Colchis. He was killed by Hercules.

PHINTIA, an ancient town of Sicily, at the mouth of the Chimæra. *Cicero, in Verr.*

PHIPPS, Constantine-John, Lord *Mulgrave*, and F. R. S. a late celebrated British navigator, born in 1746. He was great-grandson of Constantine Phipps, lord chancellor of Ireland in 1714, and son of Constantine, the 1st lord Mulgrave, by Catharine, daughter of the Earl of Anglesea. He succeeded his father in 1775. He entered young into the naval service, under his uncle, the Earl of Bristol. He was elected M. P. for Lincoln, and became an able speaker. He was also eminent as a naval commander, and made a *Voyage to the North Pole*, from June 4. to Sept. 24. 1773, to determine how far navigation was practicable to the North Pole; an accurate account of which he published in 1774. He is also said to have written the masterly Introduction to Captain Cook's last Voyage. He married Anne-Elizabeth, daughter of Nathaniel Cholmondeley, Esq. of Honsham, in Yorkshire, June 29. 1787; a rich heiress, who died in 1780, leaving a daughter. He was created a British Peer, June 17, 1790; and died at Liege, October 10, 1792; leaving a large fortune, and the most complete library in England, for all works on Naval Science.

* **PHIZ**. *n. f.* [This word is formed by a ridiculous contraction from *physiognomy*, and should therefore, if it be written at all, be written *phys.*] The face, in a sense of contempt.—

His air was too proud, and his features
amiss,

As if being a traitor had alter'd his *phiz*.
Stepney.

PHLA, an island in lake Tritonis, *Herod. iv.*

* **PHLEBOTOMIST**. *n. f.* [*phlebotomis*, Fr. from *φλεβ* and *τομος*.] One that opens a vein; a bloodletter.

* To **PHLEBOTOMIZE**. *v. a.* [*phlebotomiser*, Fr. from *phlebotomy*.] To let blood.—The frail bodies of men must be *phlebotomized*. *Howell.*

(1.) * **PHLEBOTOMY**. *n. f.* [*φλεβοτομία*, *φλεβ*, *φλ.*, vena, and *τομή*; *phlebotomie*, Fr.] Bloodletting; the act or practice of opening a vein for medical intentions.—*Phlebotomy* is not cure, but mischief; the blood so flowing as if the body were all vein. *Holyday*.—In indispositions of the liver or spleen, considerations are made in *phlebotomy* to their situation. *Brown*.—Pains from the spending of the spirits, come nearest to the copious and swift loss of spirits by *phlebotomy*. *Harris.*

(2.) **PHLEBOTOMY**. See **LANCET**, § 2; and **SURGERY**, *Index*.

PHLEGELAS, an Indian monarch beyond the Hydaspes, who surrendered to Alexander. *Q. Curt. 9. 1.*

PHLEGETHON. [*φλεγέθων*, Gr. *i. e.* burning.] in mythology, a river of Hell, whose waters flamed. *Virg. Æn. vi. 550.*

(1.) * **PHLEGM**. *n. f.* [*φlegma*; *phlegme*, Fr.] 1. The watery humour of the body, which, when it predominates, is supposed to produce sluggishness or dullness.—

Write with fury, but correct with *phlegm*.
Rogeton.
Our

Our critics take a contrary extreme,
They judge with fury, but they write with
phlegm. *Pope*.

Let melancholy rule supreme,
Choler prelide, or blood or *phlegm*. *Swift*.

2. Water among the chymists.—Linen cloth,
dipped in spirit of wine, is not burnt by the
flame, because the *phlegm* of the liquor defends
the cloth. *Boyle*.

(2.) *PHLEGM*, in the animal economy, was one
of the four humours whereof the ancients sup-
posed the blood to be composed. The chemists
make *phlegm* or water an elementary body; the
characters of which are fluidity, insipidity, and
volatility.

(1.) * *PHLEGMAGOGUES*. *n. f.* [*φαίγμα* and
αγω; *phlegmagogue*, Fr.] A purge of the milder sort,
supposed to evacuate *phlegm*, and leave the
other humours.—*Phlegmagogues* must evacuate it.
Floyer.

(2.) *PHLEGMAGOGUES*, in medicine, compre-
hend hermodactyls agaric, turbith, jalap, &c.

PHLEGMASIE, an order of diseases, in Dr
Cullen's system of physic. See *MEDICINE*, *Index*.

(1.) * *PHLEGMATICK*. *adj.* [*φλεγματικός*;
phlegmaticus, French, from *phlegm*.] 1. Abounding
in *phlegm*.—The putrid vapours, though exciting
a fever, do colliquate the *phlegmatick* humours of
the body. *Harvey*.—Chewing and smocking of
tobacco is only proper for *phlegmatic* people.
Arbutnot. 2. Generating *phlegm*.—A neat's foot,
I fear, is too *phlegmatic* a meat. *Shakespeare*.—
Negroes transplanted into cold and *phlegmatic*
habitations, continue their hue. 3. Watery.—
Spirit of wine, distilled often from salt of tartar,
grows by every distillation more and more aqueous
and *phlegmatic*. *Newton*. 3. Dull; cold; frigid.—
The inhabitants are of a heavy *phlegmatic* temper.
Audifon.—

To leave the bosom of thy love,

For any *phlegmatic* design of state. *Southern*.

(2.) A *PHLEGMATICK HABIT*, among physi-
cians, is supposed to give rise to catarrhs, coughs,
&c.

(1.) * *PHLEGMON*. *n. f.* [*φλεγμονή*.] An inflam-
mation; a burning tumour.—*Phlegmon*, or in-
flammation is the first degeneration from good
blood. *Wifeman*.

(2.) *PHLEGMON*. } See *MEDICINE*, *Index*.
PHLEGMONE. }

* *PHLEGMONOUS*. *adj.* [from *phlegmon*.] In-
flammatory; burning.—It is generated secondarily
out of the dregs and remainer of a *phlegmonous* or
oedematous tumour. *Harvey*.

PHLEGON, surnamed *Trallianus*, was born in
Trallis, a city of Lydia. He was the emperor
Hadrian's freed man, and lived to the 18th year
of Antoninus Pius. He wrote several works of
great erudition, of which we have nothing left
but fragments. Among these was a History of
the Olympiads, A Treatise of Long-lived Persons,
and another of Wonderful Things. The titles of
part of the rest of *Phlegon*'s writings are preserved
by *Snidas*. It has been supposed that the History
of Hadrian published under *Phlegon*'s name, was
written by Hadrian himself. A passage, quoted
by *Eusebius* from one of his works, respecting an

extraordinary eclipse of the sun attended by
earthquake, has been supposed to allude to the
darkness and earthquake that happened at our
Saviour's passion. But this has been disputed
among the learned; Whiston and others take
the affirmative, and Sykes the negative.

PHLEGRA. See *PALLENE*.

PHLEGYÆ, an ancient people of *Thessaly*,
who, under their leader *Phlegyas*, plundered
and burnt the temple of *Apollo* at *Delphi*. After
of them afterwards settled at *Phocis*. *Pausanias*.
Hom. II. 13.

PHLEGYAS, in fabulous history, a son of
Mars, king of the *Lapithæ* in *Thessaly*, and father
of *Ixion*, and of *Coronis*, the mother of *Escu-
lapius*, by *Apollo*. *Phlegyas*, in revenge for his
daughter's disgrace, collected an army of the
Phlegyæ, and plundered and burnt *Apollo*'s
temple; for which *Apollo* killed him and placed
him in hell, with a large stone ready to fall on his
head. *Paus.* ix. 36. *Ovid.* Met. v. 87.

* *PHLEME*. *n. f.* [from *phlebotomus*, Lat.] A
scream, so it is commonly written; an instrument
which is placed on the vein, and driven into it with
a blow, particularly in bleeding horses.

PHLEOS. See *PHEOS*.

PHLEUM, in botany, CAT'S-TAIL GRASS, a
genus of the digynia order, belonging to the tri-
andria class of plants; and, in the natural method,
ranking under the 4th order, *Gramina*.

PHLIAS, the son of *Bacchus* and *Ariadne*, one
of the Argonauts. *Paus.* ii. 12.

PHILIUS. [gen. *untis*.] Three ancient towns:
1. Of *Peloponnesus*, in *Sycion*, now called *STRA-
PHLICA*: 2. In *Elis*: 3. In *Argolis*, now called
DREPANE.

PHLOEUS, an epithet of *BACCHUS*.

PHLOGISTIC. *adj.* [from *phlogiston*.] Inflam-
matory; of or belonging to *phlogiston*, or inflam-
mability. In this sense it is used by Dr *Cullen*,
of inflammatory diseases. See *MEDICINE*, *Index*.
Dr *Brown*, also in his first edition of his *Elements
Medicine*, used this word, in a sense somewhat
similar, and the opposite term *Anti-phlogistic* for
diseases of debility; but he afterwards changed
these terms to *STHENIC* and *ASTHENIC*, as more
proper to express diseases of strength and weakness.
See *BRUNonian SYSTEM*, § 4.

PHLOGISTICATED. *adj.* in chemistry, im-
pregnated with the imaginary principle of *PHLO-
GISTON*; a word now nearly obsolete, the princi-
ple upon which it was founded being found false.

(1.) * *PHLOGISTON*. *n. f.* [*φλογιστον*, from
φλογω.] 1. A chemical liquor extremely inflamma-
ble. 2. The inflammable part of any body.

(2.) *PHLOGISTON*. (§ 1. *def.* 2.), was a term
formerly used by chemists, to express a principle
which was supposed to enter the composition
of various bodies, but which is now exploded,
and proved to have no existence. The bodies
which were thought to contain it in the largest
quantity are the inflammable substances; and the
property which these substances possess of being
susceptible of inflammation was thought to de-
pend on this principle; and hence it was some-
times called the *Principle of INFLAMMABILITY*.
Inflammation, according to this doctrine, was the
separation

separation of this principle, or *phlogiston*, from the other matter which composed the combustible body. As the emission of *light* and *heat* always attended its separation, the chemists concluded that it was light and heat combined with other matter in a peculiar manner, or that it was some highly elastic and very subtle matter, on certain modifications of which heat and light depended. But its existence, as a chemical principle in the composition of bodies, is now fully proved to be false. Sir Isaac Newton was the first who established chemistry on scientific ground. From his time till the middle of the 18th century, no real improvement was made. The progress this science has made since that period is owing to the important discovery of the existence of *HEAT* in a state of composition with other matter. Heat thus combined, loses its activity, or becomes insensible, just as acids, or any other active substance, lose their apparent qualities in composition. Heat, in this combined state, was called by its ingenious discoverer, Dr Black, *latent heat*, and it was found to be very abundant in the atmosphere, which owes its existence as an elastic fluid to the quantity of latent heat that it contains. After this discovery, Dr Crawford, considering that air was absorbed by a burning body, concluded that the heat which appears in the combustion of a combustible body, is the heat that had before existed in the air which was consumed by the burning body. M. LAVOISIER and others, prosecuting this inquiry, found that the combustible body, while it is burning, unites with the basis of the air, and that the heat which the air contained, and which was the cause of the air existing in the state of air, is expelled. This absorption of the basis of the air by the burning body, and the reduction of this basis to a solid form, accounts for the increase of weight which a body acquires by burning; or, in other words, gives a reason why the matter into which a combustible body is converted by combustion, is heavier than the body from which it was produced. The same absorption of air is observable, when a metal is converted into a calx, and the additional weight of the calx is found to be precisely equal to the weight of the air absorbed during the calcination. On these principles, therefore, we now explain the phenomena in a much more satisfactory manner, than by the supposition of *phlogiston*, or a principle of inflammability. This theory is more fully elucidated under several other articles in this work. See *CHEMISTRY, Index; FLAME, HEAT, INFLAMMATION, OXYGEN, &c.*

PHLOGONIAE, a class of compound, inflammable, and metallic fossils, found in small masses of determinately angular figures; comprehending the pyricubia, pyroctogonia, and pyripolygonia.

PHLOGOSIS. See *MEDICINE, Index*.

PHLOMIS, the *SAGE TREE*, or *Jerusalem Sage*; a genus of the gymnospermia order, belonging to the didynamia class of plants: and in the natural method ranking in the 41d order, *Verticillata*. There are 14 species, all of which have perennial roots, and of many the stalks also are perennial. The latter rise from two to five or six feet high; and are adorned with yellow, blue, or

purple flowers in whorls. They are all ornamental plants; and deserve a place in gardens, as they are sufficiently hardy to endure the ordinary winters in this climate: they require, however, a pretty warm situation. There are two species peculiarly adapted to the shrubbery, viz.

1. **PHLOMIS FRUCTICOSA**, a native of Spain and Sicily. Of this there are 3 varieties, 1. The *broad-leaved Jerusalem Sage tree*, is now very common in our gardens. Its beauty is great, and its culture very easy. It grows to about 5 feet high, and spreads its branches without order, all around. The old branches are covered with a dirty, greenish, dead, falling, ill-looking bark; and this is the worst property of this shrub; but the younger shoots are white and beautiful; they are four-cornered, woolly, and soft to the touch. The leaves are roundish, oblong, and moderately large; these grow opposite at the joints of the shrub on long foot-stalks. They are hoary to a degree of whiteness, and their foot-stalks are woolly, white, tough, and strong. The flowers are produced in June, July, and August, at the top joints of the young shoots, in large whorled bunches. They are labiated, each consisting of two lips, the upper end forked, and bending over the other. The colour is a most beautiful yellow, and being large, they exhibit their golden flowers at a great distance. 2. The *narrow-leaved Jerusalem Sage tree*, is of lower growth than the other, seldom rising higher than a yard or 4 feet. This shrub is in every respect like the other; only the shoots have a more upright tendency. The leaves also are narrower, and more inclined to a lanceolate form: they are numerous in both sorts, and hide the deformity of the bark on the older stems. In short, these sorts are qualified for shrubberies of all kinds, or to be set in borders of flower-gardens, where they will flower, and be exceeded by very few shrubs. 3. The *Cretan Sage tree*, is still of lower growth than either of the former, seldom arising to a yard in height. The leaves are of the same white hoary nature; they are very broad, and stand on long foot-stalks. The flowers are of a delightful yellow colour, very large, and grow in large whorls, which give the plant great beauty.

2. **PHLOMIS PURPUREA**, *Purple Phlomis*, or *Portugal Sage*, is 4 feet high; the stalks are woody, and send forth several angular branches, which are covered with a white bark. The leaves are spear-shaped, oblong, woolly underneath, crenated, and grow on short foot-stalks. The flowers are produced in whorls from the joints of the branches. They are of a deep purple colour, and have narrow involucre. They appear in June and July, but are not succeeded by ripe seeds in England. There is a variety of this species with iron-coloured flowers, and another with flowers of a bright purple. There are some other shrubby sorts of *phlomis*, of great beauty; but these not only often lose their leaves, and even branches, from the first frost, but are frequently wholly destroyed, if it happens to be severe. They are low shrubs, very beautiful, and look well among perennial flowers where they will not only class as to size with many of that sort, but, being rather tender, may with

K k 2 them

them have such extraordinary care as the owner may think proper to allow them. The propagation of the above sorts is very easy, and is accomplished either by layers or cuttings. 1. If a little earth be thrown upon the branches any time in the winter, they will strike root and be good plants by the autumn following, fit for any place. Thus easy is the culture by that method. 2. The cuttings will also grow, if planted any time of the year. Those planted in winter should be the woody shoots of the former summer: These may be set close in a shady border; and being watered in dry weather, will often grow. This shrub may be propagated by young slips also, in any of the summer months. These should be planted in a shady border, like sage, and well watered. If the border is not naturally shady, the beds must be hooped, and covered with matting in hot weather. Watering must be constantly afforded them; and with this care and management many of them will grow.

PHLOX, the **LYCHNIDEA**, or *Bastard Lychnis*: a genus of the monogynia order, belonging to the pentandria class of plants; and, in the natural method, ranking under the 20th order *Rotacea*. There are seven species, all natives of N. America. They have perennial roots, from which rise herbaceous stalks, from nine inches to two feet in height, adorned with tubulated flowers of a purple colour. They are propagated by offsets, and will bear the winters in this country. They require a moist, rich soil, in which they thrive better, and grow faster than in any other.

PHLYCTENÆ, *n. f.* in medicine, small eruptions on the skin.

PHOBETOR, [from *phobō*, to terrify,] in mythology, one of the sons of **SOMNUS**, and his prime minister. His office was to terrify men during sleep, by appearing to them in the form of a wild beast or serpent. *Ovid. Met. xi. 640.*

PHOCA, in zoology, a genus of quadrupeds of the order of *feræ*. There are six sharp-pointed fore teeth in the upper jaw, the outermost being larger; and 4 blunt, parallel, distinct, equal fore teeth in the under jaw. There is but one dog-tooth, and 5 or 6 three pointed grinders; and the hind legs are united so as to resemble a sheep's tail; are stretched much backwards, and bound together. Mr Kerr enumerates 19 species, and 5 varieties.

1. **PHOCA AUSTRALIS**, the *Falkland Seal*, has short pointed external ears, and inhabits the Falkland Isles. The colour is cinereous; the hairs tip with a dirty white; the nose is short, and beset with strong black bristles; the fore feet have no claws; the hind paws have 4 long claws. The animal measures 4 feet.

2. **PHOCA BARBATA**, the *great seal*, has long white whiskers with curled points. The back is arched, black, very deciduous, and very thinly dispersed over a thick skin, which is almost naked in summer. The teeth of this species are like those of the common seal; (Nº 18.) the fore feet are like the human hand, the middle toe being the longest, and the thumb short. They are upwards of 12 feet long. The Greenlanders cut out of the skin of this species, thongs and lines, a finger thick, for the seal fishery. Its flesh is as white as veal, and

is esteemed the most delicate of any. They produce plenty of lard, but very little oil. The skins of the young are sometimes used to lie on. They inhabit the high sea about Greenland, are very timid, and commonly rest on the floating ice. The females breed about March, and bring forth each a single young one on the ice, generally among the islands. The old ones swim very slowly. On the N. coast of Scotland is found a species 12 feet long. A young one, $7\frac{1}{2}$ feet long, was shown in London some years ago, which was so far from maturity as to have scarcely any teeth: yet the common seals have them complete before they attain the size of six feet, their utmost growth. One of this species, larger than an ox, was found in the Kamtschatkan seas, from 56° to 64° lat. N. called by the natives *Lach-tak*. They weighed 800lb. and were eaten by Bering's crew; but their flesh was loathsome. The cubs are entirely black.

3. **PHOCA CHILENSIS** the *Chilese Seal*, has a longish snout, external ears, and 5 toes to each foot. It inhabits the coasts of Chili and Juan Fernandez.

4. **PHOCA CRISTATA**, the *Klapmus*, or *Hooded Seal* of Pennant, has a crest on the fore part of the head; the body is of a grey colour, having a thick coat of black wool, interperfed with white hairs. It is a large animal, and has a strong folded skin on its fore head, falling over its eyes and nose. This species inhabits the S. coasts of Greenland, W. of Iceland and Newfoundland.

5. **PHOCA FASCIATA**, the *Harnessed Seal*, or *Rubben Seal* of Pennant, is of a blackish colour, and marked with yellow stripes resembling *harness* across the neck, along the sides, and haunches. They inhabit the Kurile Isles.

6. 1. **PHOCA GROENLANDICA**, the *Swartsfide*, of Erxleben, the *Attarfoak* of Crautz, or *Harp Seal* of Pennant, has a smooth head, no external ears, the body grey, with a black femular mark on the side. Both fore and hind paws have distinct nails; the head is black and pointed; the tail short and horizontal. The animal is 9 feet long. They inhabit Greenland, Newfoundland, Iceland, the Whale Sea, the Frozen Ocean and Kamtschatka. The skin is good and the oil much valued.

ii. **PHOCA GROENLANDICA NIGRA**, the *Bedlemere*, is a blackish variety of the above.

7. i. **PHOCA HISPIDA**, or **PHOCA FOETIDA**, the *Neitsfk*, or *rough seal*, is distinguished by a short nose and short round head; a body almost elliptical, covered with lard almost to the hind feet. This species seldom exceeds 4 feet in length. Their hairs are closely set together, soft, long, and somewhat erect, intermixed with curls. They are of a dusky colour; mixed with white, which sometimes varies to white, with a dusky dorsal line. They never frequent the high seas, but keep on the fixed ice in the remote bays near the frozen land; and when old, never forsake their haunts. They couple in June, and bring forth in January on the ice. In that cold situation they have a hole for fishing; near which they generally remain solitary, being rarely found in pairs. They often sleep on the surface of the water, and thus become an easy prey to the eagle. They feed on small fish, shrimps, &c. The skin, tendons, and lard, are

are used in the same way with those of other seals. The flesh is red and fetid, especially in males, which is nauseated even by the Greenlanders.

ii. *PHOCA HISPIDA QUADRATA*, or *Newfoundland Seal* is a larger variety of the above, called by the seal-hunters in Newfoundland, the *square shipper*. It weighs 500 lb. Its coat is like that of a water dog; so that it appears by the length of its hair to be allied to this species; but the vast difference in size admits not of that decision.

8. *PHOCA JUBATA*, the *Maned seal*, of Schreber, or *Leonine Seal* of Pennant, inhabits the coasts of the N. Pacific Ocean, W. coast of America, Falkland Islands, Patagonia, Kamtschatka, and the Kurile Isles. The colour is reddish; the males are sometimes 25 feet long, weigh 15 or 1600 lb. and have a long flowing mane on their necks. Their voice is like that of a bull; the head is large, nose short and turned up; with large, strong whiskers; the eyes are large, the fore feet black, resembling fins, without toes; the hind feet very broad, with small nails, and very short tails. They live in families, each male having many females, about which they often quarrel and fight.

9. *PHOCA LANIGER*, or *PHOCA LEPORINA*, the *leporine seal*, of Pennant, has hair of a dirty white colour, tinged with yellow, but never spotted. The hairs are erect, interwoven, and soft like those of a hare, especially in those of the young. The head is long; the upper lip swelling and thick; the whiskers very strong and very thick, ranged in 15 rows, covering the whole front of the lip, so that it appears bearded; the eyes are blue, and the pupil black; the teeth are strong; the forefeet short; the membranes of the hind feet even and not waved; the tail is short and thick, it being 4 inches two lines in length; the cubs are of a milk white colour. The length of the species is about six feet six inches, and the circumference where greatest 5 feet 2. This species inhabit the White Sea in the summer time, and ascend and descend the rivers with the tide in quest of prey. They are likewise found on the coasts of Iceland, and within the polar circle from Spitzbergen to Tchutki Nofs, and thence S. about Kamtschatka.

10. *PHOCA LEONINA*, the *sea-lion* of Anson, the *sea wolf* of Pernetty, or the *bottle-nose* of Pennant, is found near the S. pole. One variety of this species is described at some length by the publisher of Anson's voyage. Of these we have the following account from Pernetty's Historical Journal. "The hair that covers the back part of the head, neck, and shoulders, is at least as long as the hair of a goat. It gives this amphibious animal an air of resemblance to the common lion of the forest, excepting the difference of size. These sea-lions are 25 feet in length, and from 19 to 20 in circumference. Those of the small kind have a head resembling a mastiff's, with close cropt ears. The teeth of those which have manes, are much larger and more solid than those of the rest. In these, all the teeth in the jaw-bone are hollow. They have only four large ones, two in the lower and two in the upper jaw. The rest are not even so large as those of a horse. They inhabit the coasts of Chili, New Zealand, Juan Fernandez, Falkland Isles, and New Georgia. These sea lions

that have manes are not more mischievous or formidable than the others. They are equally unwieldy and heavy in their motions; and are rather disposed to avoid than to fall upon those who attack them. Both kinds live upon fish and water fowls, which they catch by surprise. They bring forth and suckle their young ones among the corn flags, where they retire at night, and continue to give them suck till they are large enough to go to sea. In the evening they assemble in herds upon the shore, and call their dams in cries so much like lambs, calves, and goats, that, unless apprised of it, one would easily be deceived. The tongues of these animals are very good eating. The oil which is extracted from their grease is of great use. It is preferred to that of the whale; it is always clear, and leaves no sediment. The skins of the sealions are chiefly used in making portmanteaus, and in covering trunks. When they are tanned they have a grain almost like Morocco. They are not so fine, but are less liable to tear, and keep fresh a longer time. They make good shoes and boots, which, when well seasoned, are waterproof.

11. *PHOCA MACULATA*, the *spotted seal* of Pennant, inhabits the Kurile Isles, and the seas of Kamtschatka. The body is spotted with brown.

12. *PHOCA MONACHUS*, the *hooded seal*, or *Mediterranean seal* of Pennant, inhabits chiefly the coast of Dalmatia. It has no external ears; only 4 cutting teeth in each jaw; the fore paws are not divided; the hinder paws have no nails. The skin of it folds like a *Mont's hood*, whence the names. The body is 8 feet 7 inches long, and 5 feet round.

13. *PHOCA MUTICA*, the *long-necked seal* of Pennant; has a slender body, and no claws on the fore feet, which resemble fins.

14. *PHOCA NIGRA*, the *black seal* of Pennant, has a peculiar, but undescribed, conformation of the hind legs. They inhabit the coast of the Kurile Isles.

15. *PHOCA PUNCTATA*, the *speckled seal* of Pennant, is elegantly speckled all over the body, head, and limbs. They inhabit the seas of Kamtschatka and the Kurile Isles.

16. *PHOCA PUSILLA*, the *little seal* of Schreber, Pennant, and Buffon; the *Phoca* of Aristotle; the *vitulus marinus* of Pliny, and *sea calf* of Dampier; has a smooth head, and the rudiments of external ears; the body is brown, and measures 2 feet 2 inches.

17. *PHOCA TESTUDO*, the *tortoise-headed seal* of Pennant, has a head like that of a tortoise, a slender neck, and feet like those of the common seal. It is found on the coasts of many places of Europe.

18. i. *PHOCA VITULINA*, the *sea calf*, or common SEAL, inhabits the European ocean. It has a smooth head without external ears; and the common length is from 5 to 6 feet. The fore legs are deeply immersed in the skin of the body: the hind legs are placed in such a manner as to point directly backwards: every foot has 5 toes, connected by a strong and broad web, covered on both sides with short hair. The toes are furnished with strong claws, well adapted for climbing the rocks: the claws on the hind feet are slender and

and straight; but at the ends a little incurved. The head and nose are broad and flat, like those of the otter; the neck short and thick; the eyes large and black; in lieu of external ears, it has two small orifices: the nostrils are oblong; on each side the nose are several long stiff hairs; and above each eye are a few of the same kind. The form of the tongue is very singular, being forked, or slit at the end. The cutting teeth are 6 in the upper jaw, and only 4 in the lower. It has two canine teeth above and below, and on each side of the jaw five grinders; in all 34. The whole body is covered with short hair, very closely set together: the colour of that on the body is generally dusky, spotted irregularly with white; on the belly white: but seals vary greatly in their colours: some have been found entirely white. The seal is common on most of the rocky shores of Great Britain and Ireland, especially on the N. coasts: in Wales, it frequents the coasts of Caernarvonshire and Anglesey. They inhabit all the European seas, even to the extreme north; are found far within the arctic circle, in the seas both of Europe and Asia, and even those of Kamtschatka. They prey entirely on fish, and never molest the sea fowls, for numbers of each are often seen floating on the waves, as if in company. Seals eat their prey beneath the water; and when devouring any very oily fish, the place is known by the smoothness of the waves immediately above. They are excellent swimmers, ready divers, and very bold when in the sea, swimming carelessly about boats: their dens are in caverns near the sea, but out of the reach of the tide: in summer they will come out of the water, to bask in the sun on large rocks; and that is the opportunity our countrymen take of shooting them: if they chance to escape, they hasten towards their proper element, flinging stones and dirt behind them as they scramble along: and expressing their fears by piteous moans: but if they be overtaken, they will make a vigorous defence with their feet and teeth till they are killed. They are taken for the sake of their skins, and for the oil their fat yields: the former sell for 4s. or 4s. 6d. a piece: which, when dressed, are very useful in covering trunks, making waistcoats, pouches, &c. The flesh of these animals, and even of porpoises, formerly found a place at the tables of the great; as appears from the bill of fare of that vast feast that Abp. Nevill gave in the reign of Edward IV. They couple about April, on small islands near the shore; and bring forth in those vast caverns that are numerous on our coasts: they commonly bring two at a time, which in their infant state are covered with a whitish down or woolly substance. In Oct. and Nov. the seal-hunters of Caithness enter the mouth of the caverns about midnight, and rowing up as far as they can, they land; each of them being provided with a bludgeon, and properly stationed; they light their torches, and make a great noise, which brings down the seals from the farther end, in a confused body, with fearful shrieks and cries: at first the men are obliged to give way for fear of being overborn; but when the first crowd is past, they kill as many as straggle behind, chiefly the young, by striking them on the nose: where a very slight

blow dispatches them. Seals are seen in the greatest plenty on the shores of Cornwall, in May, June, and July. Their heads in swimming are always above water. They sleep on rocks surrounded by the sea, or on the less accessible parts of our cliffs left dry by the ebb of the tide; and if disturbed by any thing, take care to tumble over the rocks into the sea. They are extremely watchful, and never sleep long without moving; then raise their heads, and lie down again, and so on, raising their heads and reclining them alternately in about a minute. They use this precaution, as being unprovided with external ears; and consequently not hearing very quick, nor from any great distance. These animals are so very useful to the inhabitants of Greenland and other arctic people, that they may be called their flocks. "Seals (says Mr Crantz, who long resided in these regions,) are more needful to them than sheep are to us, though they furnish us with food and raiment; or than the cocoa-tree is to the Indians. The seals flesh, with that of the rein-deer, supplies the natives with their most substantial food. Their fat furnishes them with oil for lamp-light, chamber and kitchen fire. They also mollify their dry food, mostly fish, in the train; and they barter it for all kinds of necessaries with the factor. They can sew better with the fibres of the seals sinews than with thread or silk. Of the skins of the entrails they make their windows, curtains for their tents, shirts, and part of the bladders they use at their harpoons; and they make train bottles of the maw. Formerly, for want of iron, they made all manner of instruments and working tools of their bones. Neither is the blood wasted, but boiled with other ingredients, and eaten as soup. Of the skin of the seal they stand in the greatest need; as they cover over with it their boats in which they seek their provisions. They also cut their straps out of them, make the bladders for their harpoons, and cover their tents with them; without which they could not subsist in summer. This is their chief business and labour from their childhood. The Greenlanders have 4 ways of catching seals: either singly, with the bladder; or in company, by the clapper-hunt; or in winter on the ice; or by shooting them with a gun. The principal and most common way is the taking them with the bladder. When the Greenlander sets out equipped, and spies a seal, he tries to surprise and strike it with his harpoon. The moment the seal is pierced, the Greenlander must throw the bladder, tied to the end of the string, into the water, on the same side as the seal runs and dives; for that he does instantly like a dart. The seal often drags the bladder under water, but so wearies itself with it, that it must come up again in 15 minutes to breathe. The Greenlander hastens to the spot, smites the seal with a long lance, and kills it; but stops the wound directly to preserve the blood; and lastly, he blows it up, like a bladder, to make it swim after him, fastened to the left side of his boat. In this exercise the Greenlanders are exposed to the most imminent danger of his life; which is probably the reason that they call this hunt or fishery *kamarock*, i. e. *the extinction, viz. of life*. For if the line should entangle itself, or catch hold of the kajak, or boat,

or twine round the ear, hand, or neck, or if the seal should turn suddenly to the other side of the boat, the *kajak* must be overturned by the string, and drawn down under water. Nay, sometimes the seal will bite him in the face or hand, or bite a hole in his *kajak*, so that he must sink. Several in company must pursue the cautious *kassgiak* by the clapper-hunt. In the same manner they also surround and kill the attarfoak in great numbers at certain seasons of the year, for in autumn they retire into the creeks or inlets in stormy weather, as in the Nepiset found in Ball's river, between the main land and the island Kangek, which is full a leagues long, but very narrow. There the Greenlanders cut off their retreat, and frighten them under water by shouting, clapping, and throwing stones; but as they must come up again to draw breath, they kill them with darts. This is a very profitable diversion for the Greenlanders, for often one man will have 8 or 10 seals for his share. The third method of killing seals upon the ice is mostly practised in Disko, where the bays are frozen over in the winter. The seals make sometimes holes in the ice, where they breathe; near such a hole a Greenlander places himself, and when the seal puts its nose to the hole, he pierces it instantly with his harpoon; then breaks the hole larger, draws it out, and kills it. When the current wears a great hole in the ice in spring, the Greenlanders plant themselves all round it, till the seals come in droves to the brim to breathe, when they kill them with their harpoons. Many also are killed on the ice while sleeping. Mr. Pennant in his *Arctic Zoology*, vol. 1. after describing the manner in which the Kamtschatkans prepare their seals flesh and fat, for winter provisions, adds, "Besides the uses which are made of the flesh and fat of seals, the skins of the largest are cut into soles for shoes. The women make their summer boots of the undressed skins, and wear them with the hair outmost. In a country which abounds so greatly in furs, very little more use is made of the skins of seals in the article of dress than what has been mentioned. But the *Koriacks*, the *Oloutores*, and *Tchutchi*, form with the skins canoes and vessels of different sizes, some large enough to carry 30 people. Seals swarm on all the coasts of Kamtschatka, and will go up the rivers 80 versts in pursuit of fish. The Tungusi give the milk of these animals to their children instead of physick. The navigators observed abundance of seals about Bering's island, but that they decreased in numbers, as they advanced towards the straits, for where the walrus abounded, the seals grew scarce. Seals are now become a great article of commerce. The oil from the vast whales is no longer equal to the demand for supplying the magnificent profusion of lamps in and round the capital. The chase of these animals is redoubled for that purpose; and the skins, properly tanned, are in considerable use in the manufactory of boots and shoes."

ii. *PHOCA VITULINA BOTHNICA* is a variety differing in having a broader nose, longer nails, and a darker colour. They inhabit the Gulf of Bothnia.

iii. *PHOCA VIT. CASPICA*, the Caspian seal, is of a mixed colour, and inhabits the Caspian Sea.

iv. *PHOCA VIT. SIBERICA*, the Siberian seal, is of a silver white colour, and inhabits the lakes Baikal and Orom in Siberia.

19. *PHOCA URSINA*, the *sea bear*, or *ursine seal*, has external ears. The male is greatly superior in size to the female. The bodies of each are of a conic form, very thick before, and taper to the tail. The length of a large one is eight feet; the greatest circumference, five feet; near the tail, 20 inches; and the weight is about 800 lb. The nose projects like that of a pug-dog, but the head rises suddenly; the teeth lock into one another when the mouth is shut: the tongue is large; the eyes are large and prominent, and may be covered at pleasure by a fleshy membrane. The length of the fore legs is 22 inches; they are like those of other quadrupeds, not immersed in the body like those of seals; the feet are formed with toes like those of other animals, but are covered with a naked skin, so that externally they seem to be a shapeless mass; the hind legs are fixed to the body quite behind, like those of common seals; but are capable of being brought forward, so that the animal makes use of them to scratch its head. These animals are found in the northern seas. They are found in amazing quantities between Kamtschatka and America; but are scarcely known to land on the Asiatic shore: nor are they even taken, except in the three Kurilian islands; and from thence in the Bobrowie More, or Beaver Sea, as far as the Kronski headland, off the river Kamtschatka, which comprehends only from 50° to 56° Lat. N. It is observable that they never double the southern cape of the peninsula, or are found on the western side in the Penschinska sea; but their great resort has been observed to be to Bering's islands. They are regularly migratory. They first appear off the three Kurile islands, and Kamtschatka in the earliest spring. There is not one female which does not come pregnant. Such as are then taken are opened, the young taken out and skinned. They are found in Bering's island only on the western shore, being the part opposite to Asia, where they first appear on their migration from the south. Urine seals are also found in the S. hemisphere, from under the line, in the isle of Gallipagos, to New Georgia, in Lat. 54° 15' S. and Lon. 37° 15' W. In the intermediate parts, they are met with in New Zealand, in the isle of Juan Fernandez, and Massa Fuera, and along the coasts of Chili to Terra del Fuego and Staten Land. In Juan Fernandez, Staten Land, and New Georgia, they swarm, as they do at the N. extremity of this vast ocean. Those of the S. hemisphere also migrate. Alexander Selkirk, who passed 4 lonely years on the isle of Juan Fernandez, remarked that they come ashore in June, and stay till September. Captain Cook found them again in their place of emigration in equal abundance, on Staten Land and New Georgia in Dec. and Jan.; and Don Pernetty found them on the Falkland islands in Febr. According to the Greenlanders, this species inhabits the S. parts of their country. They call it *Auvekajak*, and say it is very fierce, and tears to pieces whatsoever it meets; that it lives on land as well as in water, and is greatly dreaded by the hunters. During the three months of summer they

they lead a most indolent life: they arrive at the islands vastly fat; but during that time they are scarce ever in motion, confine themselves for whole weeks to one spot, sleep a great part of the time, eat nothing, and, except the employment the females have in suckling their young, are totally inactive. They live in families: each male has from 8 to 50 females, whom he guards with the jealousy of an eastern monarch; and tho' they lie by thousands on the shores, each family keeps itself separate from the rest, and sometimes, with the young and unmarried ones, amount to 120. The males are very irascible, and often fight about the females. The battles are very violent; the wounds they receive are very deep, and resemble the cuts of a sabre. At the end of a fight they leap into the sea, to wash away the blood. The males are very fond of their young, but very tyrannical towards the females. They swim very swiftly, at the rate of seven miles an hour. If wounded, they will seize on the boat, and carry it along with vast impetuosity, and oftentimes sink it. They can continue a long time under water. When they want to climb the rocks, they fasten with their fore paws, and draw themselves up. They are very tenacious of life, and will live for a fortnight after receiving such wounds as would immediately destroy any other animal. The Kamtschätkans take them by harpooning, for they never land on their shore. To the harpoon is fastened a long line, by which they draw the animal to the boat after it is spent with fatigue; but in the chase, the hunters are afraid of too near an approach, lest the animal should fasten on, and sink their vessel. The flesh of the old males is rank and nauseous; that of the females is said to resemble lamb; that of the young ones roasted, a sucking pig. The skins of the young, cut out of the bellies of the dams, are esteemed for clothing, and are sold for about 3s. 4d. each; those of the old for only 4s. Their emigration is in Sept. when they depart excessively lean, and take their young with them. On their return, they again frequent the same places which they did in the spring. Their winter retreats are unknown: they are supposed to be the islands between Kurili and Japan, called *Campagni Land*, *Staten Land*, *Jeso Gafima*, which were discovered by Martin Uriel in 1642; as by his account, the natives employed themselves in the capture of seals. They arrive along the shores of the Kurili islands, and part of those of Kamtschatka, from the S. They inhabit only the W. side of Bering's isle which faces Kamtschatka; and when they return in September, their route is due S. pointing towards the discoveries of Uriel.

PHOCÆA, the last town of Ionia, and of Æolis, because situated on the right or N. side of the Hermus, which he makes the boundary of Æolis to the S. (*Mela, Plin. Ptol.*) It stood far in the land, on a bay or arm of the sea; had two very safe harbours, the one called *Lampter*, the other *Naustathmos*. (*Livy.*) It was a colony of Ionians, situated in the territory of Æolis. (*Herod.*) Massilia in Gaul was a colony from it. It was one of the 12 cities which assembled in the Panionium, or general council of Ionia. Some writers tell us, that while the foundations of this city were lay-

ing, there appeared near the shore a great shoal of sea-calves; whence it was called *Phocæa*, from *phos* a sea-calf. Ptolemy, who makes the Hermus the boundary between Æolia and Ionia, places Phocæa in Æolis; but all other geographers reckon it among the cities of Ionia. It stood on the sea-coast, between Cuma on the N. and Smyrna on the S. near Hermus; and was anciently one of the most wealthy and powerful cities of all Asia; but is now a poor village, though the see of a bishop. The Phocæans were expert mariners, and the first among the Greeks that undertook long voyages; which they performed in galleys of 50 oars. As they applied themselves to trade and navigation, they became acquainted pretty early with the coasts and islands of Europe, where they are said to have founded several cities, viz. *VELIA* in Italy; *ALALIA*, or *ALERIA*, in Corsica; and *Mosalia* (now MARSEILLES) in Gaul. Neither were they unacquainted with Spain; for Herodotus tell us, that, in the time of Cyrus the Great, the Phocæans arriving at Sartessus, a city in the Bay of Cadiz, were treated with extraordinary kindness by Argathonius king of that country, who, hearing that they were under apprehension of the growing power of Cyrus, invited them to settle in his kingdom. The Phocæans could not be prevailed upon to forsake their country; but accepted a large sum of money, which that prince generously gave them, to defray the expence of building a strong wall round their city. This wall they built on their return; but it was unable to resist the power of Cyrus, whose general Harpagus, investing the city with a numerous army, soon reduced it to the utmost extremities. The Phocæans offered to capitulate, but the conditions offered by Harpagus seeming severe, they begged he would allow them three days to deliberate; and, in the mean time, withdraw his forces. Harpagus complied with their request, and the Phocæans put their wives, children, and most valuable effects on board several vessels, and conveyed them to the island of Chios. Their design was to purchase the Ænesian islands, which belonged to the Chians, and settle there. But the Chians, jealous of losing their trade, refused: so they put to sea again, and having taken Phocæa by surprise, put all the Persians in it to the sword. They next went to Corsica, but great part of them returned very soon. They then lived in subjection either to the Persians, or tyrants of their own. Among the latter we find mention made of Laodamus, who attended Darius Hystaspis in his expedition against the Scythians; and of Dionysius, who, joining Aristagoras, tyrant of Miletus, and chief author of the Ionian rebellion, retired, after the defeat of his countrymen, to Phœnicia, where he made an immense booty, seizing on all the ships he met with trading to that country. From Phœnicia he failed to Sicily, where he committed great depredations on the Carthaginians and Tuscans; but is said never to have molested the Greeks. In the Roman times the city of Phocæa sided with Antiochus the Great; whereupon it was besieged, taken, and plundered, by the Roman general, but allowed to be governed by its own laws. In the war which Aristonicus brother to Attalus, king of

Pergamus,

Pergamus, raised against the Romans, they afflicted the former to the utmost of their power; which so highly displeased the senate, that they commanded the town to be demolished, and the whole race of the Phœceans to be exterminated. But the Massilienses interposed, and, with difficulty, assuaged the anger of the senate. Pompey declared Phœcia a free city, and restored the inhabitants to all their privileges; whence, under the first emperors, it was reckoned one of the most flourishing cities of all Asia Minor. It is now called **FOCHIA**.

PHOCÆANS, or **PHOCÆENSES**, the people of **PHOCÆIA**, or **PHOCÆA**.

PHOCAICUS, a name given to **MARCELLUS**.

Lucan.

PHOCAS, a Roman centurion, who was made emperor by the army, and was crowned at Constantinople about A. D. 603. The emperor **MAURITIUS**, thus deserted, fled to Chalcedon with his five children, whom Phocas caused to be inhumanly murdered before his eyes, and then he murdered Mauritius himself, his brother, and several others who were attached to him. Phocas then sent his own image, and that of his wife **Leontia**, to Rome. Gregory the Great, then bishop of Rome, caused the images to be lodged in the oratory of the martyr **Casarius**, and wrote congratulatory letters to the usurper. As soon as the murder of Mauritius was known, **Narses**, who commanded the troops on the frontiers of Persia, revolted. Phocas, however, managed matters so as to gain him over to his interest, and then treacherously burnt him alive. Phocas, by his cruelty, soon became generally hated, for he spared neither sex nor age, and amongst others he murdered **Constantina** the widow of **Mauritius**, and her daughters. In 609 a conspiracy was formed against him, but was discovered, and the persons concerned in it put to death. In 610, however, he was overtaken by the fate he had so long deserved. **Heraclius**, the son of **Heraclius** governor of Africa, being acknowledged as emperor, by the people of Africa, sailed thence with a formidable fleet, and a powerful army, for Constantinople, where he defeated the tyrant's fleet. Phocas took refuge in the palace; but one **Photinus**, whose wife he had debauched, pursuing him, forced the gates, dragged the cowardly emperor from the throne, and having stripped him of the imperial robes, and clothed him with a black vest, carried him in chains to **Heraclius**, who commanded his hands and feet, then his arms, and at last his head, to be cut off; and his body was delivered to the soldiers, who burnt it in the forum. Such was the end of this cruel tyrant, after he had reigned 7 years and some months. He was greatly addicted to wine and women, inexorable, a stranger to compassion, and in his principles a heretic.

PHOCENSES, or **PHOCESIANS**, the inhabitants of **PHOCIS**.

PHOCICUM BELLUM, the *Phocian* or *Sacred War* carried on by the Thebans and Philip II. against the Phocians, for plundering the temple of **Apollo** at **Delphi**. See **MACEON**, § 8, and **PHOCIS**.

PHOCILIDES, a Greek poet and philosopher

of **Miletus**, who flourished about A. A. C. 540. The poetical piece now extant, attributed to him, is not of his composition, but of another poet who lived in the reign of **Adrian**.

PHOCION, a distinguished Athenian general and orator in the time of **Philip II.** of **Macedon**. He was too modest to solicit command, though, either as a soldier, orator, statesman, or general, he was by far the most eminent Athenian of his time. As he was a most disinterested patriot; he could entertain no affection for **Philip**; but as he knew the disposition of his countrymen, and how unlikely they were to support measures necessary to humble the **Macedonian** power, he chose rather to cultivate the esteem which **Philip** showed for the state of **Athens**, as a means of preserving her, when she should be reduced to that situation which he conceived they wanted virtue to prevent. (See **MACEON**, § 8.) He was, however, appointed to command the army which was sent to assist the **Byzantines** against **Philip**, whom he obliged to return to his own dominions. This truly great man, whom (though extremely poor) no sum offered by **Philip** or **Alexander** could bribe to betray his country, and who on all occasions gave them sound advice, was at length accused by his ungrateful countrymen. This happened A. A. C. 318. He was sent to **Athens** by **Polyperchon**, head of a faction in **Macedonia**, with his friends, chained, in carts, with this message, "That though he was convinced they were traitors, yet he left them to be judged by the **Athenians**, as a free people." They were all in a summary manner condemned to death, viz. **Phocion**, **Nicocles**, **Aheudippus**, **Agamon**, and **Pythocles**; these were present: **Demetrius Phalereus**, **Callimedon**, **Charicles**, and others, were condemned in their absence. The spleen of his enemies was not extinguished with his life; they decreed that his corpse should be banished the **Athenian** territories. When the **Athenians** began to cool, and remember the many services they had received from **Phocion**, they decreed him a statue of brass, ordered his bones to be brought back at the public expence, and decreed that his accusers should be put to death.

PHOCIS, a country of **Greece**, between **Boeotia** on the E. and **Locris** on the W. extending from the **Sinus Corinthiacus** on the S. to the sea of **Eubœa** on the N. and, according to **Dionysius**, as far as **Thermopylæ**; but reduced afterwards to narrower bounds. (*Demost. Strab. Paus.*) Its greatest length was from N. to S. between 38° 45' and 39° 20', about 35 miles; but not extending 30 miles from E. to W. i. e. from 23° 10' to 23° 40' at the widest, but about 23 miles towards the **Corinthian** bay, and much narrower still towards the N. It was named from **Phocus** the son of **Ornytion**, a native of **Corinth**; but was soon after invaded by the **Æginetæ**, under **Phocus**, the son of **Æacus** king of **Ægina**. In **Phocis** there were many celebrated mountains, particularly **Cythæron**, **Hælicon**, and **Parnassus**. (See these two last.) **Cythæron** was consecrated to the **Muses** as well as **thebes**, and was equally celebrated by the poets. The chief river was the **Cephissus**, running from the foot of **Parnassus**, northward, and falling into the **Pindus**, near the boundary of that kingdom. It

had several considerable cities; such as Cyrra, Crissa, and ANTICYRA, which, according to Ptolemy, were on the sea coasts; and PYTHIA, DELPHIA, Daulis, Elatia, Ergothenia, and Baulia, which were inland towns. *Elatia* was the largest and richest after Delphi. *Daulis* was remarkable for the stature and prowess of its inhabitants; and for the tragical events said to have happened in it. (See PHILOMELA, N° II.) DEUCALION was king of that part of Phocis which lies about Parnassus, at the time that Cecrops I. flourished in Attica; but the Phocians afterwards formed themselves into a commonwealth, governed by general assemblies chosen from among themselves, and changed frequently. Of the history of the Phocians little is known till the time of the holy war, of which the following was the origin. The Phocians having presumed to plough the territories of the city of Cyrra, consecrated to the Delphic god, were summoned by the other Grecian states before the court of the Amphilyons, where a considerable fine was imposed upon them for their sacrilege. They refused to pay it, and at the next assembly their dominions were adjudged confiscated to the use of the temple. This exasperated the Phocians still more; who, at the instigation of one PHILOMELUS, seized upon the temple, plundered it of its treasure, and held the sacred depositum for a considerable time. This gave rise to the *Phocian or Holy war*, wherein Athens, Sparta, and some others of the Peloponnesian states declared for the Phocians; and the Thebans, Thessalians, Locrians, and others, against them. The various particulars of this war, which lasted 10 years; and wherein Philip II. of Macedon took an active part; with the defeat and death of PHAYLLUS and Onomarchus, the Phocian generals, are related under MACEDON, § 8. The war being ended, the grand council assembled, and imposed an annual fine of 60 talents upon the Phocians, to be paid to the temple, and continued till they had fully repaired the damage it had sustained, and, till this reparation should be made, they were excluded from dwelling in walled towns, and from having any vote in the grand assembly. They did not, however, continue long under this heavy sentence: their known bravery made their assistance so necessary to the rest, that they were glad to remit it; after which remission they continued to behave with their usual courage and resolution, and soon obliterated their former guilt.

PHOCUS, the name of three ancient Grecians: 1. The founder, and, 2. the first invader of PHOCIS; which last was the son of Æacus by Phamæthe, one of the Nereids, and brother of PELEUS and Telamon; who killed him: 3. The son of the celebrated PHOCION, who avenged his father's death, but never did any other memorable action.

PHOCYLIDES. See PHOCILIDES.

PHOEBE, in the mythology, 1. a name of Diana; (See DIANA.) 2. A daughter of Leucippus, brother of Tyndarus, K. of Sparta, by Philodice, the daughter of Inachus. She and her sister Hilaria, were betrothed to their cousins Lynceus and Idas, but were carried off and married by their other cousins, CASTOR and POLLUX.

PHOEBEUM, a town of Laconia, near Sparta.

PHŒBIDAS, a Spartan general sent to assist the Macedonians against the Thracians. He seized the citadel of Thebes, for which act of perfidy, the Spartans, instead of rewarding, disgraced and banished him, though they still retained the citadel. (C. Nepos.) He died A. A. C. 377.

PHŒBUS one of the names given by ancient mythologists to the Sun, Sol, or Apollo. See APOLLO.

PHŒMOS, a lake of Arcadia. *Lempr.*

(1.) PHŒNICĒ, an ancient town of Epirus. *Livy.* xxix. c. 12.

(2.) PHŒNICĒ, or } the ancient name of a
PHŒNICIA, } country lying between
the 34th and 36th degrees of Lat. N.; bounded
by Syria on the N. and E.; by Judea on the S.;
and by the Mediterranean on the W. Some derive
the name from one PHŒNIX; others from
qaniz, a palm or date, as these trees abounded
in this country. Some suppose that *Phœnice* is origi-
nally a translation of the Hebrew word *Edom*,
from the Edomites who fled thither in the days
of David. By the contraction of Canaan it was
also called *Cbna*, and anciently RAABOTHIM and
Colpitis. The Jews commonly called it CANAAN;
though some part of it they knew by the name of
SYROPHŒNIC. Bochart tells us that the most
probable etymology is *Phœne Anak*, i. e. "the de-
scendants of Anak." Such were the names pecu-
liar to this small country; though Phœnice was
sometimes extended to all the maritime countries
of Syria, Judea, and Canaan, to the Philistines,
and even to the Amalekites. But these two
names, and the rest, were most generally swal-
lowed up by those of PALESTINE and SYRIA.
There is some disagreement among authors with
respect to the northern limits of this country.
Ptolemy makes the river *Eleutherus* the boundary
of Phœnice on the N.; but Pliny, Mela, and Ste-
phanus, place it in the island of Aradus, N. of
that river. Strabo observes, that some will have
the river Eleutherus to be the boundary of Se-
leucia, on the side of Phœnice and Cœlosyria. On
the coast of Phœnice, and S. of the Eleutherus,
stood the following cities: SIMYRA, Orthosia,
TRIPOLIS, Botrys, Byblus, Palæbyblus, Berytus,
SIDON, SAREPTA, TYRUS, PALATYRUS. Phœ-
nice extended, according to Ptolemy, even be-
yond mount Carmel; for that geographer places
in Phœnice, not only Ecdippa and Ptolemais, but
Sycaminum and Dæra, which stand S. of that
mountain. These, however, properly speaking,
belonged to Palestine. We will not attempt to
mark out the bounds of the midland Phœnice.
Ptolemy reckons in it the following towns: Ar-
ca, Palæbyblus, (Old Byblus,) Gabala, and Ce-
saria Paniz. This province was considerably ex-
tended in the times of Christianity: when, being
considered as a province of Syria, it included both
Damascus and Palmyra. The soil is good, and
productive of many necessaries for food and cloth-
ing. The air is wholesome and the climate a-
greeable. It is plentifully watered by small ri-
vers; which, running down from mount Libanus,
sometimes swell to an immoderate degree, either
increased by the melting of the snows on that
mountain, or by heavy rains. Upon these occa-
sions they overflow, to the great danger and hin-
derance

derance of the traveller and damage of the country. Among these rivers is that of ADONIS.

(1.) PHOENICIAN, *adj.* Of or belonging to Phœnicia.

(2.) PHOENICIAN LANGUAGE. See PHILOLOGY, &c. IV.

PHOENICIANS, the inhabitants of PHOENICIA. It is universally allowed that the Phœnicians were Canaanites by descent. Their blood must have been mixed, however, with that of foreigners in process of time, as happens in all trading places. The Phœnicians were governed by kings; and their territory, small as it was, included several kingdoms; namely, those of Sidon, Tyre, Aradas, Berytus, and Byblus. In this particular, they adhered to the primitive government of their forefathers; who, like the other Canaanites, were under many petty princes, to whom they allowed the sovereign dignity, reserving to themselves their natural rights and liberties. Of their civil laws we have no system. With regard to religion, the Phœnicians were the most gross and abominable idolaters. Baal-berith, Baalzebub, Baalsamen, &c. mentioned in Scripture, were some of the Phœnician gods; as were also Moloch, Ashtaroth, and Thammuz. Among the Phœnicians, the chief deity was named *Baal*, or *Baal-famen*; whom the Hebrews called *Baal-she-mim*, or the God of heaven. (See BAAL.) Diodorus Siculus says, their chief deity was that of Carthage, *Chronus*, or SATURN. The sacrifices offered up to him were children of the best families. Our author also tells us, that the Carthaginians had a brazen statue or colossus of this god, the hands of which were extended in act to receive, and bent downwards in such a manner, that the child laid thereon immediately fell down into a hollow where there was a fiery furnace. He adds also, that this inhuman practice seemed to confirm a tradition handed down to the Greeks from very early antiquity, viz. that Saturn devoured his own children. The goddess Cœlestis, or URANIA, was held in the highest veneration by the Carthaginians. She is thought to have been the same with the queen of heaven mentioned in Jeremiah, the Juno Olympia of the Greeks. Besides these, there were several other deities of later dates, who were worshipped among the Phœnicians, particularly those of Tyre, and consequently among the Carthaginians also. These were Jupiter, Apollo, Mars, and Bacchus. Jupiter was worshipped under the name of *Belus* or *Baal*. To him they addressed their oaths. The same name was also given to the other two, whence they were frequently mistaken for one another. Apollo, or the sun, went either by this name simply, or by others of which *Baal* made a part. ASTARTE, or ASHTAROTH, was also a chief goddess of the Phœnicians. See ASHTAROTH, and POLYTHEISM. Herodotus supposes the Phœnicians to have been circumcised; but Josephus asserts, that none of the nations included under the vague name of Palestine and Syria used that rite, the Jews excepted. They obtained, however, from the flesh of swine. Much is said of their arts, sciences, and manufactures; but in general terms only. The SIDONIANS, who were a branch of the Phœnicians, were of a most happy genius.

They were early addicted to philosophical exercises; inasmuch that Mosehus, a Sidonian, taught the doctrine of atoms before the Trojan war: and Abomenus of Tyre puzzled Solomon by his questions. Phœnicia continued to be one of the seats of learning, and both Tyre and Sidon produced their philosophers of later ages; namely, Boethus and Diodatus of Sidon, Antipater and Apollonius of Tyre, who gave an account of the writings and disciples of Zeno. As to their manufactures, the glass of Sidon, the purple of Tyre, and the exceeding fine linen they wove, were the product of their own country, and their own invention; and for their extraordinary skill in working metals, in hewing timber and stone; in a word, for their perfect knowledge of what was solid, great, and ornamental in architecture—we need only mention the large share they had in erecting and decorating the temple at Jerusalem under their king Hiram. Their taste for taste, design, and ingenious invention, was such, that whatever was elegant, great, or pleasing in apparel, vessels, or toys, was distinguished by the epithet of Sidonian. The Phœnicians were likewise celebrated as merchants, navigators, and planters of colonies in foreign parts. As merchants, they may be said to have engrossed all the commerce of the western world: as navigators, they were the boldest, the most experienced, and greatest discoverers of the ancient times: they had for many ages no rivals. In planting colonies they exerted themselves so much, that considering their habitation was little more than the slip of ground between mount Libanus and the sea, it is surprising how they could furnish such supplies of people, and not wholly depopulate their own country. It is generally supposed that the Phœnicians were induced to deal in foreign commodities by their neighbourhood with the Syrians; and that, from their example, they turned their thought to trade and navigation, and by an uncommon application, soon eclipsed their masters in that art. That some of the Edomites fled into this country in the days of David, and that they were a trading people, is evident. The whole thoughts of the Phœnicians were employed on schemes to advance their commerce. They affected no empire but that of the sea; and seemed to aim at nothing but the peaceable enjoyment of their trade. This they extended to all the known parts they could reach; to the British isles, commonly understood by the Cassiterides; to Spain and other places in the ocean, both within and without the Straits of Gibraltar; and, in general, to all the ports of the Mediterranean, the Black Sea, and the Lake Mæotis. In all these parts they had settlements and correspondents, from which they drew what was useful to themselves, or might be so to others; and thus they exercised the three great branches of trade; importation, exportation, and transportation. Such was their trade by sea; and for that which they carried on by land in Syria, Mesopotamia, Assyria, Babylonia, Persia, Arabia, and India, it was of no less extent, and may give us an idea of what this people once was, how rich and how deservedly their merchants are mentioned in Scripture as equal to princes. Their country was, at that time

the great warehouse, where every thing that might either administer to the necessities or luxury of mankind was to be found; which they distributed as they judged would be best for their own interest. As to their navigation, their larger embarkations were of two sorts; they divided them into round ships or *gauli*; and long ships, galleys, or *triremes*. When they drew up in line of battle, the *gauli* were disposed at a small distance from each other in the wings, or in the van and the rear; their *triremes* were contracted together in the centre. To discourage other nations from engaging in commerce, they practised piracy, and thus grasped at the whole commerce of the then known world. They very early applied astronomy to navigation. See *ASTRONOMY, Index*.

PHOENICOPTERUS, the **FLAMINGO**, in ornithology, a genus of birds belonging to the order of *gralla*. The beak is naked, toothed, and bent as if it were broken; the nostrils are linear; the feet are palmated, and four-toed. There is but one species; viz.

PHOENICOPTERUS BAMANENSIS of Catelby, a native of Africa and America. This species resembles the heron in shape, excepting the bill, which is of a very singular form. It is two years old before it arrives at its perfect colour; and then it is entirely red, excepting the quill feathers, which are black. A full grown one is of equal weight with a wild duck; and when it stands erect, it is five feet high. The feet are webbed. The flesh is delicate, and mostly resembles that of a partridge in taste. The tongue, above any other part, was in the highest esteem with the luxurious Romans. These birds make their nests on hillocks in shallow water; on which they sit with their legs extended down, like a man sitting on a stool. They breed on the coasts of Cuba and the Bahama islands in the West Indies; and frequent salt water only. By the particular shape of its bill, this bird, in eating, twists its neck from side to side, and makes the upper mandible touch the ground. They are very stupid, and will not rise at the report of a gun; nor is it any warning to those who survive, that they see others killed by their side; so that, by keeping himself out of sight, a fowler may kill as many as he pleases. See *plate CCLXXXIII*. These birds prefer a warm climate. In the old continent they are not often met with beyond Lat. 40° N. or S. They are met with everywhere on the African coast and adjacent isles, to the Cape of Good Hope; and sometimes on the coasts of Spain, Italy, and those of France, lying on the Mediterranean; being at times found at Marseilles, and for some way up the Rhone. In some seasons they frequent Aleppo and the parts adjacent. They are seen also on the Persian side of the Caspian Sea, and thence along the west coast as far as the Volga; though this is at uncertain times, and chiefly in considerable flocks coming from the NE. mostly in October and November; but, so soon as the wind changes, they totally disappear. They breed in the Cape Verde isles, particularly in that of Sal. They go for the most part in flocks, except in breeding time. Dampier says, that, with two in company, he killed fourteen at once, which they effected by secreting themselves. Kolben tells us, that they

are very numerous at the Cape; keeping in the day on the borders of the lakes and rivers, and lodging at night in the long grass on the hills. They are also common in the warm parts of America, as Peru, Chili, Cayenne, Brazil, and the various islands of the West Indies. Sloane found them in Jamaica, at the Bahama Islands and Cuba, where they breed. Their food chiefly consists of small fish or their eggs; and of water insects, which they search after, by plunging in the bill and part of the head. Whilst feeding, one of them is said to stand sentinel, and the moment he sounds the alarm, the whole flock takes wing. This bird, when at rest, stands on one leg, the other being drawn up close to the body, with the head placed under the wing on that side of the body it stands on. They are sometimes caught young, and are brought up tame; but are always impatient of cold; and in this state seldom live.

PHOENICURUS. See *MOTACILLA*, N° 10.

PHOENICUS, in ancient geography: 1. mountain of Boeotia: 2. and 3. A mountain and town in Lycia: 4. A sea-port of Erythræ. *Livy*, lvi. c. 45.

PHOENICUSA, one of the *Æolian Islands*; now called *FELICUDI*. See that article.

PHOENISSA, a patronymic of Dido. *Virg.*

(1.) **PHOENIX**, son of Amyntor, king of Argos, by Cleobule or Hippodamia, was preceptor to young Achilles. His father having proved faithless to his wife, through fondness for a concubine called *Clytia*, Cleobule persuaded her son Phoenix to ingratiate himself with his father's mistress. Phoenix easily succeeded; but Amyntor, discovering his intrigues, pronounced a curse upon him, and the son was soon after deprived of his sight by divine vengeance. Some say that Amyntor himself put out his son's eyes, which so provoked him, that he meditated the death of his father. Piety, however, prevailed over passion; and that he might not become a parricide, Phoenix fled from Argos to the court of Peleus, king of Phthia. Here he was treated with tenderness; Peleus carried him to Chiron, who restored him to his eyesight; soon after which, he was made preceptor to Achilles, his benefactor's son. He was also presented with the government of many cities, and made king of the Dolopes. He went with his pupil to the Trojan war. After the death of Achilles, Phoenix, with others, was commissioned by the Greeks to return into Greece, to bring to the war young Pyrrhus. This commission he successfully performed; and after the fall of Troy, he returned with Pyrrhus, and died in Thrace. He was buried, according to Strabo, near Trachinæ, where a small river in the neighbourhood received the name of *Phœnix*.

(2.) **PHOENIX**, the son of Agenor, by a nymph who was called *Telephassa*, according to Apollodorus and Moschus, or, according to others, *Epimêdusa*, *Perimeda*, or *Agriope*. He was, like his brother Cadmus, and Cœux, sent by his father in pursuit of his sister Europa, whom Jupiter under the form of a bull, had carried away; and when his inquiries proved unsuccessful, he settled in a country, which was from him called **PHOENICIA**. From him also the Carthaginians were called **POENI**.

(3.) **PHOENIX**

(3.) PHOENIX, in astronomy, one of the new Southern Constellations. See ASTRONOMY, § 549.

(4.) PHOENIX, in botany, the *Great Palm*, or *Date tree*; a genus of plants belonging to the order of palmæ. There is only one species, viz.

PHOENIX DACTYLIFERA, the common DATE TREE, a native of Africa and the eastern countries, where it grows to 50, 60, and 100 feet high. The trunk is round, upright, and studded with protuberances, which are the vestiges of the decayed leaves. From the top issues forth a cluster of leaves or branches 8 or 9 feet long, extending all round like an umbrella, and bending a little towards the earth. The bottom part produces a number of stalks like those of the middle, but seldom shooting so high as 4 or 5 feet. These stalks, says Adanson, diffuse the tree very considerably; so that, wherever it naturally grows in forests, it is extremely difficult to open a passage through its prickly leaves. The date tree was introduced into Jamaica soon after the conquest of the island by the Spaniards. There are, however, but few of them in Jamaica at this time. The fruit is somewhat in the shape of an acorn. It is composed of a thin, light, and glossy membrane, somewhat pellucid and yellowish; which contains a fine, soft, and pulpy fruit, which is firm, sweet, and somewhat vinous to the taste, eculent, and wholesome; within this is inclosed a solid, tough, and hard kernel, of a pale grey colour on the outside, and finely marbled within like the nutmeg. For medicinal use, dates are to be chosen large, full, fresh, yellow on the surface, soft and tender, not too much wrinkled; such as have a vinous taste, and do not rattle when shaken. They are produced in many parts of Europe, but never ripen perfectly there. The best are brought from Tunis; they are also very fine and good in Egypt and in many parts of the east. Those of Spain and France look well; but are never perfectly ripe, and very subject to decay. They are preserved three different ways; some pressed and dry; others pressed more moderately, and again moistened with their own juice; and others not pressed at all, but moistened with the juice of other dates, as they are packed up, which is done in baskets or skins. Those preserved in this last way are much the best. Dates have always been esteemed moderately strengthening and astringent. Though the date tree grows everywhere indiscriminately on the northern coasts of Africa, it is not cultivated with care, except beyond Mount Atlas; because the heat is not sufficiently powerful along the coasts to bring the fruits to maturity. M. Des Fontaines says, all that part of the Zaara which is near Mount Atlas, and the only part of this vast desert which is inhabited, produces very little corn; the soil being sandy, and burnt up by the sun, is almost entirely unfit for the cultivation of grain, its only productions of that kind being a little barley, maize, and fargo. The date tree, however, supplies the deficiency of corn to the inhabitants of these countries, and furnishes them with almost the whole of their subsistence. They have flocks of sheep; but as they are not numerous, they preserve them for the sake of their

wool; besides, the flesh of these animals is very unwholesome food in countries that are excessively warm. The date trees are planted without order, twelve feet distant from each other, near rivulets and streams. Forests of them may be seen here and there, some of which are several leagues in circumference. The extent of these plantations depends upon the quantity of water which can be procured to water them. All these forests are intermixed with orange, almond, and pomegranate trees, and with vines which twist round the trunks of the date trees; and the heat is strong enough to ripen the fruit, though they are never exposed to the sun. Along the rivulets and streams dykes are erected to stop the course of their waters, that they may be distributed amongst the date trees by small canals. The number of canals is fixed for each individual; and in several cantons, to have a right to them, the proprietors are obliged to pay an annual sum proportionable to the number and extent of their plantations. Care is taken to till the earth well, and to raise a circular border around the root of each tree, that the water may remain longer and in larger quantity. The date trees are watered in every season, but more particularly during the great heats of summer. In winter, new plantations of this tree are formed. For this purpose, those who cultivate them take shoots of those which produce the best dates, and plant them at a small distance one from the other. At the end of three or four years, these shoots begin to bear fruit: but this fruit is as yet dry, without sweetness, and even without kernels; they never reach the highest degree of perfection of which they are susceptible till they are about 15 or 20 years old. These plants are, however, produced from the seeds taken out of the fruit, provided they are fresh. They should be sown in pots filled with light rich earth, and plunged into a moderate hot-bed of tanners bark, which should be kept in a moderate temperature of heat, and frequently watered. When the plants are come up to a proper size, they should be each planted in a separate small pot, filled with the same light earth, and plunged into a hot-bed again, observing to refresh them with water, as also to let them have air in proportion to the warmth of the season and the bed in which they are placed. During the summer, they should remain in the same hot-bed; but in the beginning of August they should have a great share of air to harden them against the approach of winter; for if they are too much forced, they will be so tender as not to be preserved through the winter without much difficulty, especially if there is not a bark stove to keep them in. The soil in which these plants should be placed must be composed in the following manner; viz. half of light fresh earth taken from a pasture ground, the other half sea-sand and rotten dung, or tanners bark in equal proportion; these should be carefully mixed, and laid in a heap three or four months at least before it is used, but should be often turned over to prevent the growth of weeds, and to sweeten the earth. The trees, however, which spring from seed, never produce so good dates as those that are raised from shoots; they being always poor and ill tasted. It is undoubtedly by force of cultivation,

cultivation, and after several generations, that they acquire a good quality. The date trees which have been originally sown, grow rapidly, and bear fruit in the fourth or fifth year. Care is taken to cut the inferior branches of the date tree in proportion as they rise; and a piece of the root is always left, of some inches in length, which affords the easy means of climbing to the summit. These trees live a long time, according to the account of the Arabs; who say that, when they have attained to their full growth, no change is observed in them for the space of three generations. The number of females which are cultivated is much superior to that of the males, because they are much more profitable. The sexual organs of the date tree grow upon different stalks, and these trees flower in April and May, when the Arabs cut the male branches to impregnate the females. For this purpose, they make an incision in the trunk of each branch which they wish to produce fruit, and place in it a stalk of male flowers; without this precaution the date tree would produce only abortive fruit. In some cantons the male branches are only shaken over the female. The practice of impregnating the date tree in this manner is very ancient. Pliny describes it very accurately in that part of his work where he treats of the palm tree. There is scarcely any part of the date tree which is not useful. The wood, though of a spongy texture, lasts such a number of years, that the inhabitants of the country say it is incorruptible. They employ it for making beams and instruments of husbandry; it burns slowly, but the coals which result from its combustion are very strong, and produce a great heat. The Arabs strip the bark and fibrous parts from the young date trees, and eat the substance, which is in the centre; it is very nourishing, and has a sweet taste; it is known by the name of the marrow of the date tree. They eat also the leaves, when they are young and tender, with lemon juice; the old ones are laid out to dry, and are employed for making mats and other works of the same kind, which are much used, and with which they carry on a considerable trade in the interior parts of the country. From the sides of the stumps of the branches which have been left, arise a great number of delicate filaments, of which they make ropes, and which might serve to fabricate cloth. Of the fresh dates and sugar, says Hasselquist, the Egyptians make a conserve, which has a very pleasant taste. In Egypt they use the leaves as fly-flaps, for driving away the numerous insects which prove so troublesome in hot countries. The hard boughs are used for fences and other purposes of husbandry; the principal stem for building. The fruit, before it is ripe, is somewhat astringent; but when thoroughly mature, is of the nature of the fig. The Senegal dates are shorter than those of Egypt, but much thicker in the pulp, which is said to have a sugary agreeable taste, superior to that of the best dates of the Levant. A white liquor, known by the name of *melk*, is drawn also from the date tree. To obtain it, all the branches are cut from the summit of one of these trees, and after several incisions have been made in it, they are covered with leaves, in order that the heat of

the sun may not dry it. The sap drops down into a vessel placed to receive it, at the bottom of a circular groove, made below the incisions. The milk of the date tree has a sweet and agreeable taste when it is new; it is very refreshing, and it is even given to sick people to drink, but it generally turns sour in 24 hours. Old trees are chosen for this operation, because the cutting of the branches, and the large quantity of sap which flows from them, greatly exhaust them, and often cause them to decay. The male flowers of the date tree are also useful. They are eaten when still tender, mixed up with a little lemon juice. They are reckoned to be very provocative: the odour which they exhale is probably the cause of this property being ascribed to them. These date trees are very lucrative to the inhabitants of the desert. Some of them produce 20 bunches of dates; but care is always taken to lop off a part of them, that those which remain may become larger; 10 or 12 bunches only are left on the most vigorous trees. It is reckoned that a good tree produces, one year with another, about the value of 10 or 11 shillings to the proprietor. A pretty considerable trade is carried on with dates in the interior part of the country, and large quantities of them are exported to France and Italy. The crop is gathered towards the end of November. When the bunches are taken from the tree, they are hung up in some very dry place, where they may be sheltered and secure from insects. Dates afford wholesome nourishment, and have a very agreeable taste when they are fresh. The Arabs eat them without seasoning. They dry and harden them in the sun, to reduce them to a kind of meal, which they lay up in store to supply themselves with food during the long journeys which they often undertake across their deserts. This simple food is sufficient to nourish them for a long time.—The inhabitants of the Zaara procure also from their dates a kind of honey which is exceedingly sweet. For this purpose they choose those which have the softest pulp; and having put them into a large jar with a hole in the bottom, they squeeze them by placing over them a weight of eight or ten pounds.—The most fluid part of the substance, which drops through the hole, is what they call the *honey* of the date. Even the stones, though very hard, are not thrown away.—They give them to their camels and sheep as food, after they have bruised them, or laid them to soften in water. The date, as well as other trees which are cultivated, exhibits great variety in its fruit, with respect to shape, size, quality, and even colour. There are reckoned to be at least 20 different varieties. Dates are very liable to be pierced by worms, and they soon corrupt in moist or rainy weather.

(5.) PHOENIX, in ornithology, a fabulous bird of antiquity. The ancients speak of this bird as single, or the only one of its kind; they describe it as of the size of an eagle; its head finely crested with a beautiful plumage, its neck covered with feathers of a gold colour, and the rest of its body purple, only the tail white, and the eyes sparkling like stars; they say, that it lives above 500 years in the wilderness; that when thus advanced in age, it builds itself a pile of sweet wood and aromatic

aromatic gums, and fires it with the wafting of its wings, and thus burns itself, and that from its ashes arises a worm, which in time grows up to be a phoenix. Hence the Phœnicians gave the name of *phœnix* to the palm-tree; because when burnt down to the root it rises again fairer than ever. In the sixth book of the Annals of Tacitus, sect. 28, it is observed that, in the year of Rome, 787, the phœnix revisited Egypt; which occasioned among the learned much speculation. This being is sacred to the sun. Of its longevity the accounts are various. The common persuasion is, that it lives 500 years; though by some the period is extended to 1461. But Ausonius makes it no less than 69,984 years! *Bidyl.* 18. The several eras when the phœnix has been seen are fixed by tradition. The first was in the reign of Sesostris; the 2d in that of Amasis; and, in the period when Ptolemy III. was on the throne of Egypt, another phœnix directed its flight towards Heliopolis. When to these circumstances are added the brilliant appearance of the phœnix, and the tale that it makes frequent excursions with a load on its back, and that when, by having made the experiment through a long tract of air, it gains sufficient confidence in its own vigour, it takes up the body of its father and flies with it to the altar of the sun to be there consumed; it cannot but appear probable, that the learned of Egypt had enveloped under this allegory the philosophy of COMETS.

(6.) PHOENIX, a river in Trachinia.

PHÆNOMENOLOGY, *n. f.* a system of, or treatise on phenomena. See PHILOSOPHY, Sect. III. PHENOMENON. See PHÆNOMENON.

PHOLAS, a genus of insects, belonging to the order of vermes testacea. The shell is double-valved and divaricated; the cardo is turned backwards, and connected by a cartilage. There are six species, distinguished by the figures of their shells. The name *pholas* is derived from the Greek, and signifies something which lies hid. This name they derive from their property of making themselves holes in the earth, sand, wood, or stone, and living in them. The means of their getting there, however, are as yet entirely unknown. All that we can know with certainty is, that they must have penetrated these substances when very small; because the entrance of the hole in which the pholas lodges is always much less than the inner part of it, and indeed than the shell of the pholas itself. Hence some have supposed that they were hatched in holes accidentally formed in stones, and that they naturally grew of such a shape as was necessary to fill the cavity. The holes in which the pholades lodge are usually twice as deep, at least, as the shells themselves are long; the figures of the holes is that of a truncated cone, excepting that they are terminated at the bottom by a rounded cavity, and their position is usually somewhat oblique to the horizon. The openings of these holes are what betray the pholas being in the stone; but they are always very small in proportion to the size of the fish. There seems to be no progressive motion of any animal in nature so slow as that of the pholas; it is immersed in the hole, and has no movement except a small one towards the centre of the earth; and this is only proportioned to the growth of the

animal. Its work is very difficult in its motion; but it has great time to perform it in, as it only moves downward, sinking itself deeper in the stone as it increases in bulk. That part by means of which it performs this, is a fleshy substance placed near the lower extremity of the shell; it is of the shape of a lozenge, and is considerably large in proportion to the size of the animal; and though it be of a soft substance, it is not to be wondered at that in so long a time it is able, by constant work, to burrow into a hard stone. How they perform this may be seen by taking one of them out of the stone, and placing it upon some soft clay; for they will immediately get to work in bending and extending that part allotted to dig for them, and in a few hours they will bury themselves in the mud in as large a hole as they had taken many years to make in the stone. They find little resistance in so soft a substance; and the necessity of their hiding themselves evidently makes them hasten their work. The animal is lodged in the lower half of the hole in the stone, and the upper half is filled up by a pipe of a fleshy substance and conic figure, truncated at the end: this they usually extend to the orifice of the hole, and place on a level with the surface of the stone; but they seldom extend it any farther than this. The pipe, though it appears single, is in reality composed of two pipes, or at least it is composed of two parts separated by a membrane. The use of this pipe or proboscis is the same with that of the proboscis of other shell-fish, to take in sea-water into their bodies, and afterwards to throw it out again. In the middle of their bodies they have a small green vessel, the use of which has not yet been discovered. This, when plunged in spirit of wine, becomes of a purple colour: but its colour on linen will not become purple in the sun like that of the murex; and even if it would, its quantity is too small to make it worth preserving. The pholas is remarkable for its luminous quality, which was noticed by Pliny, who observes that it shines in the mouth of the person who eats it; if it touch his hands or clothes, it makes them luminous; and that its light depends upon its moisture. M. Reaumur observes, that whereas other fishes give light when they tend to putrefescence, this is more luminous in proportion to its being fresh; that when dried, its light will revive if it be moistened either with fresh or salt water, but that brandy immediately extinguishes it. He endeavoured to make this light permanent, but none of his schemes succeeded. The attention of the Bolognian academicians was engaged to this subject by M. F. Marfilus in 1724, who brought a number of these fishes, and the stones in which they were inclosed, to Bologna, on purpose for their examination. Boccarius observed, that though this fish ceased to shine when it became putrid, yet that in its most putrid state it would shine, and make the water in which it was immersed luminous when it was agitated. Galeatus and Montius found that wine or vinegar extinguished this light; that in common oil it continued some days, but in rectified spirit of wine or urine hardly a minute. To discover in what manner this light was affected by different degrees of heat, they made use of a Reaumur's thermometer, and found that water rendered

rendered luminous by these fishes increased in light till the heat arrived to 45° , but that it then became suddenly extinct, and could not be revived again. In the experiments of Beccarius, a solution of sea-salt increased the light of the luminous water; a solution of nitre did not increase it quite so much. Sal ammoniac diminished it a little, oil of tartar *per deliquium* nearly extinguished it, and the acids entirely. This water poured upon fresh calcined gypsum, rock crystal, ceruse, or sugar, became more luminous. He also tried the effects of it when poured upon various other substances, but there was nothing very remarkable in them. Afterwards, using luminous milk, he found that oil of vitriol extinguished the light, but that of tartar increased it. He had the curiosity to try how differently coloured substances were affected by this kind of light; and having, for this purpose, dipped several ribbons in it, the white came out the brightest, next to this was the yellow, and then the green; the other colours could hardly be perceived. It was not, however, any particular colour, but only light, that was perceived in this case. He then dipped boards painted with the different colours, and also glass tubes filled with substances of different colours, in water rendered luminous by the fishes. In both these cases, the red was hardly visible, the yellow was the brightest, and the violet the dullest. But on the boards, the blue was nearly equal to the yellow, and the green more languid; whereas in the glasses, the blue was inferior to the green. Of all the liquors into which he put the pholades, milk was rendered the most luminous. A single pholas made 7 ounces of milk so luminous, that the faces of persons might be distinguished by it, and it looked as if transparent. Air appeared to be necessary to this light; for when Beccarius put the luminous milk into glass tubes, no agitation would make it shine unless bubbles of air were mixed with it. Montius and Galeatius found, that, in an exhausted receiver, the pholas lost its light, but the water was sometimes made more luminous; which they ascribed to the rising of bubbles of air through it. Beccarius, as well as Reaumur, tried many schemes to render the light of these pholades permanent. For this purpose he kneaded the juice into a kind of paste with flour, and found that it would give light when it was immersed in warm water; but it answered best to preserve the fish in honey. In any other method of preservation, the property of becoming luminous would not continue longer than six months, but in honey it had lasted above a year; and then it would, when plunged in warm water, give as much light as ever. See *Barbulet's Genera Vermium*, p. 14, &c. Also *Plate* 169.

PHOLEY, **FOULI**, or **FUILY**, a country or kingdom of Africa, in Guinea, on the banks of the Senegal, divided from that of the **MANDINGOS** by lake Cayor; extending 160 leagues, or 480 miles from E. to W. Its breadth from N. to S. is not ascertained. The country is populous and the soil very fertile; producing rich crops of corn, rice, millet, peas, cotton, tobacco, and great variety of fruits and roots. It feeds great numbers of sheep, goats, horses, and black cattle; and abounds with lions, tigers, elephants, crocodiles, and other wild beasts. The king is called *Siratick*,

and is said to have great authority over his subjects.

PHOLEYS, or **FOULIES**, the inhabitants of the above kingdom, are a people of very peculiar manners. Mr More however says, that the **Pholeys** live in clans, build towns, and are in every kingdom and country on each side the river; yet are *not subject to any of the kings of the country*, though they live in their territories; for if they are used ill in one nation, they break up their towns, and remove to another. He gives a beautiful account of their character, dispositions and morals, which is partly quoted under the article **GUINEA**, § 4. They are rather of a low stature, but have a genteel and easy shape, with an air peculiarly delicate and agreeable. Though they are strangers in the country, they are the greatest planters in it. They are extremely industrious and frugal, and raise much more corn and cotton than they consume, which they sell at reasonable rates; and are so remarkable for their hospitality, that the natives esteem it a blessing to have a Pholey town in their neighbourhood; and their behaviour has gained them such reputation, that it is esteemed infamous for any one to treat them in an inhospitable manner. Their humanity extends to all, but they are doubly kind to people of their own race. They are however as brave as any people of Africa, and very expert in the use of their arms, which are javelins, cutlasses, bows and arrows, and upon occasion guns. They usually settle near some Mandingo towns, their being scarce any of note up the river that has not a Pholey town near it. Most of them speak Arabic, which is taught in their schools; and they are able to read the Koran in that language, though they have a vulgar tongue called *Pholey*. Their houses are built in a very regular manner, they being round structures, placed in rows at a distance from each other to avoid fire, and each of them has a thatched roof somewhat resembling a high-crowned hat. They are also great huntsmen, and not only kill lions, tigers, and other wild beasts, but frequently go 20 or 30 in a company to hunt elephants; whose teeth they sell, and whose flesh they smoke, dry, and eat, keeping it for several months together. They are almost the only people who make butter, and sell cattle at some distance up the river. They are very particular in their dress, and never wear any other clothes but long robes of white cotton, which they make themselves. They are always very clean, especially the women, who keep their houses exceedingly neat.

PHOLIDOTUS. See **PANGOLIN**.

(1.) **PHOLIS**, in ichthyology, the name of a small anguiform fish. The back is brown, the belly is white, the whole back and sides are spotted, and the skin is soft, free of scales, but with a tough mucilaginous matter like the eel. This species most of all approaches to the *alauda*; and though usually larger, yet Mr Ray doubts whether it really differs from it in any thing essential; the distinction is in colour, which though a very obvious, is certainly a very precarious one.

(2.) **PHOLIS**, in the old system of mineralogy, the name of a genus of fossils of the class of gypsums or plaster-stones. Its distinguishing characters are, that the bodies of it are tolerably hard, composed

composed of particles somewhat broad, and of a bright crystalline lustre. The name is derived from *poik*, a *scale* or *small flake*, because they are composed of particles of that form. The species are very valuable, and perhaps the most so of all the gypsums, because they burn to the best and finest plaster, but so far as is yet known, there are but 2 of them: viz. the fine plaster-stone of Montmartre in France, called by us *plaster of Paris stone* and *parget*; and the other, the coarser and somewhat reddish kind, common in many parts of England, and called *ball plaster*. See PLASTER OF PARIS.

PHOLOE, 1. a mountain of Arcadis, near Pifa, so named from PHOLUS, who was buried in it: 2. another in Thessaly, near mount Othrys. *Plin.* iv. 6. *Lucan.* 3.

PHOLUS, in fabulous history, one of the Centaurs, who entertained Hercules, when going against the Erymanthian boar. *Paus.* 3. *Virg. Æn.* 8, 294.

PHONASCUS. See MUSIC, § 42.

(1.) * PHONICKS. *n. f.* [from *φωνη*.] The doctrine of sounds.

(2.) PHONICS, is otherwise called ACOUSTICS. See that article.

* PHONOCAMPTICK. *adj.* [from *φωνη* and *καμπη*.] Having the power to inflect or turn the sound, and by that to alter it.—The magnifying the sound, by the polyphonisms or repercussions of the rocks, and other *phonocamptick* objects. *Derbam.*

PHORCUS, or } in the mythology, the son

PHORCYS, } of Neptune by Thoosia, who married his sister Ceto, by whom he had the GORGONS, the dragon, that kept the gardens of the Hesperides, and other monsters. *Hesiod.*

PHORMIO, an Athenian general, who reduced himself to poverty to maintain the dignity of his army. The Athenians paid his debts, and offered to make him head general, which he declined.

PHORMIUM, in botany, a genus of the monogynia order, belonging the hexandria class of plants. The most remarkable species is

PHORMIUM TENAX, (of Forster,) the FLAX PLANT, a plant that serves the inhabitants of New Zealand instead of hemp and flax. Of this plant there are two sorts; the leaves of both resemble those of flax, but the flowers are smaller, and their clusters more numerous; in one kind they are yellow, and in the other a deep red. Of the leaves, with very little preparation, they make all their common apparel, and also their strings, lines, and cordage, for every purpose; which are much stronger than any thing we can make with hemp. From the same plant, by another preparation, they draw long, slender fibres, which shine like silk, and are as white as snow: of these, which are very strong, they make their finest cloths; and of the leaves, without any other preparation than splitting them into proper breadths, and tying the strips together they make their fishing nets, some of which are of an enormous size. The seeds of this valuable plant have been brought over into England; but, upon trial, appeared to have lost their vegetating power.

PHOKONEUS, in fabulous history, the son of Phocus by Melissa, brother of Io, and the second

king of Argos. He married the nymph Laodice, by whom he had Apis and Niobe; civilized his subjects; built a temple to Juno, &c. and after death was worshipped as the god of the river of the same name.

PHORONIS, a pantronymic of Io, or Ifis.

PHORONIUM, a town of Argolis.

I. PHOSPHAS, } *n. f.* [from *phosphorus*.] in che-

I. PHOSPHAT, } mistry, a salt formed by the union of the phosphoric acid, with different bases. (See CHEMISTRY, *Index*, and *Vocab.* I. and II.) Phosphats are ranked by the ingenious Dr Thomas Thomson, in his *Syst. of Chem.* vol. II.) as the "7th genus of alkaline and earthy salts."

"This class of salts, (says the Dr) was first distinguished by Pott and Margraff. Several of the phosphats were afterwards examined by Haupt, Schlosser, Rouelle, Proust, Wöstrum, and Scheele; but for the most complete account of them we are indebted to Fourcroy and Vauquelin. They may be distinguished by the following properties: 1. When heated along with combustibles, they are not decomposed, nor is phosphorus obtained. 2. Before the blow-pipe they are converted into a globule of glass, which in some cases is transparent, in others opaque. 3. Soluble in nitric acid without effervescence, and precipitated from that solution by lime-water. 4. Decomposed, at least partially, by sulphuric acid; and their acid, which is separated when mixed with charcoal and heated to redness, yields phosphorus. 5. After being strongly heated, they often phosphoresce. The earthy phosphats at present known amount to 13; some of which are found native in great abundance."

1. "PHOSPHAT OF ALUMINA. This salt has only been examined by Fourcroy. It may be formed by saturating phosphoric acid with alumina. It is a tasteless powder, insoluble in water. Dissolved in phosphoric acid, it yields a gritty powder, and a gummy solution, which by heat is converted into a transparent glass.

2. "PHOSPHAT OF AMMONIA exists in urine, and was first accurately distinguished by Rouelle. It was afterwards examined by LAVOISIER in 1774, and still more lately by Vauquelin. It is usually prepared by saturating with ammonia the superphosphat of lime obtained from boner, and evaporating the solution to such a consistency, that, when allowed to cool, the phosphat of ammonia is obtained in crystals. It crystallizes in four-sided prisms, terminated by equal-sided pyramids. Its taste is cooling, salt, and ammoniacal. Its specific gravity is 1.8051. It is soluble in 4 parts of water at the temperature of 60°, and in rather a smaller proportion of boiling water. By spontaneous evaporation it is obtained in the state of regular crystals. It is not altered by exposure to the air. When heated it undergoes the watery fusion: it then dries; but if the heat be continued, it swells up, loses its alkaline base, and the acid melts into a transparent glass. It is the only one of the earthy and alkaline phosphats which can be decomposed by heat: hence the reason that it yields phosphorus when distilled along with charcoal. It is decomposed by the sulphuric, nitric and muriatic acids, and by the fixed alkalies and alkaline earths. It is capable of combining

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with an additional dose of acid, and of passing into the state of a *super-phosphat*. According to Fourcroy, it is decomposed by the following salts: 1. Sulphats of strontian, lime, magnesia, glucina, alumina, zirconia. 2. Sulphites of barytes, lime, potass, soda, strontian, magnesia, glucina. 3. Nitrats of barytes, strontian, lime, magnesia, glucina, alumina, zirconia. 4. Murats of barytes, strontian, lime, magnesia, glucina, alumina, zirconia. 5. Phosphats of lime, barytes, strontian, magnesia, potass, soda. 6. Fluats and borats of lime, barytes, strontian, magnesia, potass, soda. 7. Carbonats of barytes, strontian, lime, potass, soda. This salt is much employed as a flux, in experiments with the blow-pipe. It enters also as an ingredient in those coloured glasses called *pastes*, which are made in imitation of precious stones." See PASTES.

3. "PHOSPHAT OF AMMONIA AND MAGNESIA was first discovered by Fourcroy, in a calcareous concretion formed in the colon of a horse. Since this discovery, Fourcroy and Vauquelin observed it also in human urine. It may be prepared by mixing solutions of the phosphats of ammonia and magnesia in water: the triple salt immediately precipitates in the state of a white powder. When urine is allowed to remain a considerable time in close vessels, it often deposits this salt in regular crystals on the sides and bottom of the vessel. These crystals are small four-sided prisms, terminated by irregular four-sided pyramids. This salt is tasteless, scarcely soluble in water, and not liable to be altered by exposure to the air. When heated, it falls to powder, gives out its ammonia, and in a high temperature melts into a transparent globule. When distilled along with charcoal, phosphorus is obtained. Fourcroy has ascertained, that the phosphat of ammonia and magnesia obtained from the calculous concretion of the horse is composed of 33 phosphat of ammonia, 33 phosphat of magnesia, and 33 water.

4. "PHOSPHAT OF BARYTES has hitherto been described only by M. Vauquelin. It may be prepared either by saturating phosphoric acid with barytes, or carbonat of barytes, or by mixing an alkaline phosphat and nitrat or muriat of barytes. In either case the phosphat of barytes precipitates immediately in the form of a white powder. This salt is tasteless, incrySTALLIZABLE by art, insoluble in water, and not altered by exposure to the air. Its specific gravity is 1.2867. When strongly heated, it melts into a grey coloured enamel. The proportion of its component parts is unknown. According to Fourcroy, it is decomposed by the following salts: 1. All the earthy and alkaline sulphats. 2. Sulphite of lime. 3. Nitrats of strontian, lime, alumina. 4. Murats of lime, glucina, zirconia. 5. Carbonats of potass, soda.

5. "PHOSPHAT OF GLUCINA has only been examined by Vauquelin. He obtained it by pouring phosphat of soda into the solution of glucina in sulphuric, nitric, or muriatic acids. The phosphat of glucina is precipitated in the state of a white powder. It does not crystallize. It is tasteless, insoluble in water, unless it contains an excess of acid, and not liable to be altered by expo-

sure to the air. When heated strongly, it melts into a transparent glass. According to Fourcroy, it is decomposed by the following salts: 1. Sulphats of alumina, zirconia. 2. Sulphites of barytes, lime, potass, soda, strontian, ammonia, magnesia. 3. Nitrats of alumina, zirconia. 4. Murats of alumina, zirconia. 5. Phosphites, fluats, and borats of lime, barytes, strontian, magnesia, potass, soda, ammonia. 6. Carbonats of barytes, strontian, lime, potass, soda, ammonia.

6. "PHOSPHAT OF LIME. This interesting salt," (says our learned author,) "which constitutes the basis of BONES, was pointed out by Scheele and Gahn in 1774: but for the first precise account of its properties we are indebted to Ekeberg, Fourcroy, and Vauquelin. As this salt constitutes the basis of bones, it is not necessary to prepare it artificially. It may be obtained in a state of purity by the following process: Calcine the bones to whiteness, reduce them to powder, and wash them repeatedly with water, to separate several soluble salts which are present. After this edulcoration, there remains only phosphat of lime, and a little carbonat of lime. This last salt may be dissolved by means of weak acetic acid; and the phosphat, after being well washed, remains in a state of purity. Phosphat of lime, thus prepared, is always in the state of a white powder; but it is found native in regular crystals. In that state it is known by the name of *apatite*. The primitive form of its crystals is, according to Haüy, the regular six-sided prism; and the primitive form of its integrant particles is a three-sided prism, whose bases are equilateral triangles: But it very often assumes other forms. It is destitute of taste, insoluble in water, and not liable to be altered by exposure to the air. It may be exposed to a strong heat without undergoing any change; but in a very violent heat it becomes soft, and is converted into a white semi-transparent enamel, or rather porcelain. According to the experiments of Saussure, a heat of 378° Wedgwood is necessary to produce this effect. Sulphuric, nitric, muriatic, fluoric, and several vegetable acids, are capable of decomposing phosphat of lime; but the decomposition is only partial. Fourcroy and Vauquelin have ascertained, that these acids are only capable of abstracting 0.40 parts of the lime, while the remainder continues combined with phosphoric acid, constituting a *Super-phosphat of Lime*. Hence the reason that phosphoric acid is capable also of decomposing partially the combinations of these acids with lime: it abstracts as much of the lime as is sufficient to convert it into super phosphat. Phosphat of lime, according to Fourcroy and Vauquelin, is composed of 41 acid, 59 lime. According to Fourcroy, it is decomposed by the following salts: 1. Fluats of barytes, potass, soda. 2. Borat of barytes. This salt is employed for making cupels: from it alone almost the whole of the PHOSPHORUS employed by chemists is extracted. It is employed likewise as a medicine in rickets.

7. "Super-PHOSPHAT OF LIME was discovered in 1795, by Fourcroy and Vauquelin. It had indeed been often formed before, but chemists had neglected to examine it. It is this salt, which always remains in the aqueous solution, when calcined

calced bones are decomposed by sulphuric acid; and it may be formed artificially by dissolving phosphat of lime in phosphoric acid, till the acid refuses to take up any more, and afterwards evaporating the solution till the salt crystallizes. Its crystals are usually thin brilliant plates resembling mother-of-pearl, which easily adhere together, and acquire a kind of gluey consistency. Its taste is strongly acid. Water dissolves it; and in a greater proportion when boiling hot than when cold; hence a saturated solution of it in boiling water crystallizes on cooling. It attracts a little moisture when exposed to the air. When heated, it readily undergoes the watery fusion; then swells up and dries. In a high temperature, it melts into a semitransparent glass, which is tasteless and insoluble, and is not altered by exposure to the air. When this salt is heated to redness along charcoal, its excess of acid is decomposed, and converted into phosphorus, and phosphat of lime remains behind. It is from this salt that PHOSPHORUS is usually obtained; but the process of Fourcroy, which consists in decomposing the super-phosphat of lime by acetite of lead, and afterwards decomposing the phosphat of lead by means of charcoal, must yield a much greater proportion of phosphorus. No acid hitherto tried is capable of decomposing this salt except the oxalic, which abstracts its base completely, and precipitates with it in the form of oxalat of lime; but it is decomposed and reduced to the state of phosphat of lime by all the alkaline and earthy bases. It is composed, according to Fourcroy and Vauquelin, of 54 acid, 46 lime.

8. "PHOSPHAT OF MAGNESIA" was first formed by BERGMAN in 1775. It has been lately examined with much precision by the celebrated and indefatigable Vauquelin. It is usually prepared by dissolving carbonate of magnesia in phosphoric acid, and evaporating the solution gradually till the salt crystallizes; but it may be obtained in large regular crystals by a much easier process first pointed out by Fourcroy. Mix together equal parts of the aqueous solutions of phosphat of soda and sulphat of magnesia. No apparent change takes place at first; but in a few hours large transparent crystals of phosphat of magnesia appear in the solution. Its crystals are six sided prisms, the sides of which are unequal. It has very little taste; however, it leaves a cooling and sweetish impression upon the tongue. Its specific gravity is 1.5489. It requires about 15 parts of cold water to dissolve it. It is more soluble in boiling water, but it crystallizes in part as the solution cools. When exposed to the air, it loses its water of crystallization, and falls down in powder. When heated moderately, it is also reduced to a dry powder. In a high temperature, it melts into a transparent glass. According to Fourcroy, it is decomposed by the following salts: 1. Sulphats of glucina, zirconia. 2. Sulphites of barytes, lime, potash, soda, glucina. 3. Nitrats of barytes, strontian, lime. 4. Murats of barytes, strontian, glucina, zirconia. 5. Phosphites of lime, barytes, strontian, potash, soda. 6. Fluats of lime, barytes, strontian, potash, soda, ammonia. 7. Borats of lime, barytes, strontian, potash, soda. 8. Carbonats of strontian, lime, potash, soda."

9. "PHOSPHAT OF POTASH" was first formed by Lavoisier in 1774. It was afterwards examined by Vauquelin. It is prepared by saturating phosphoric acid with potash, and evaporating the solution to the required consistency. This salt does not crystallize when evaporated sufficiently; it assumes the form of a jelly; and if the evacuation be carried farther, it becomes dry altogether. Its specific gravity, when dry, is 2.8516. It is exceedingly soluble in water; and when dry readily attracts moisture from the atmosphere, and is converted into a viscid liquid. When heated, it first undergoes the watery fusion; then allows its water of crystallization to evaporate, and is reduced to dryness. In a high temperature it melts into a transparent glass, which deliquesces again when exposed to the air. It is completely decomposed by the sulphuric, nitric, and muriatic acids; and by barytes, strontian, and lime. The following salts, according to Fourcroy, have the property of decomposing it: 1. Sulphats of soda, strontian, lime, ammonia, magnesia, glucina, alumina, zirconia. 2. Sulphites of barytes, lime, strontian, glucina. 3. Nitrats of barytes, soda, strontian, lime, ammonia, magnesia, glucina, alumina, zirconia. 4. Murats of barytes, soda, strontian, lime, ammonia, magnesia, glucina, alumina, zirconia. 5. Phosphites of lime, barytes. 6. Fluats, borats, and carbonates of barytes, lime.

10. "PHOSPHAT OF SODA." This salt exists ready formed in urine, and was the first known of all the phosphats. It occupied a good deal of the attention of chemists; and the difficulty of analyzing it gave occasion to various hypotheses concerning its nature. Helot remarked it in urine; and described it, in 1737, as a salt differing from those that had been usually observed. Haupt described it in 1740, under the name of *Sal mirabile perlatum*, or "wonderful perlated salt." It was called *perlated* from the grey opaque *pear-like* colour, which it assumed when melted by the blow-pipe. Margraff described it in 1745, and found it would not yield phosphorus when treated with charcoal, as the other salts of urine did. Rouelle Jun. analyzed it in 1776, and concluded that it was a compound of phosphoric acid and soda; but Mr Proust, being unable to obtain phosphorus from it, concluded that it did not contain phosphoric acid, but another acid analogous to the boric acid. To this substance, which Mr Proust actually obtained, Bergman gave the name of *perlated acid*, and Morveau afterwards called it *auratic acid*. But Mr Klaproth soon afterwards analysed it, and proved that it consisted of soda supersaturated with phosphoric acid. Scheele soon after made the same discovery. The acid of Mr Proust, then, is merely phosphat of soda, combined with phosphoric acid, or *super-phosphat of soda*. Dr Pearson afterwards introduced it with great advantage into medicine, as a purgative. He gives the following process for preserving it: Dissolve in a long-necked matrass 1400 grains of crystallized carbonate of soda in 2100 grains of water, at the temperature of 150°. Add gradually 500 gr. of phosphoric acid of the specific gravity 1.85. Boil the liquor for some minutes; and while it is boiling hot, filtrate it, and pour it into a shallow vessel. Let it remain in a cool place, and crystals

will continue to form for several days. From the above quantities of materials he has obtained from 1450 to 1550 grains of crystals. Apothecaries usually prepare it from the super-phosphat of lime, (N^o 7.) obtained from bones by sulphuric acid. An excess of carbonat of soda is added to separate the lime. The liquid is then filtered and evaporated slowly till it crystallizes. Its crystals are rhomboidal prisms, of which the acute angles are 60°, and the obtuse angles 120°, terminated by a three-sided pyramid. Its specific gravity is 1.333. Its taste is almost the same with that of common salt. It is soluble at the temperature of 60°, in about 4 parts of water, and 2 of boiling water. This solution crystallizes on cooling; but to obtain the salt properly crystallized, the solution should contain a slight excess of alkali. When exposed to the air, this salt very soon effloresces on the surface. When heated it undergoes the watery fusion. At a red heat it melts into a white enamel. Before the blow-pipe it melts into a transparent globule, which becomes opaque on cooling, and its surface acquires a polyhedral figure. It is not altered by combustibles, nor metals. With metallic oxides it enters into fusion, and forms a coloured globule of glass. Sulphuric, nitric, and muriatic acids, decompose it partially, and convert it into *super-phosphat of soda*. In this state it is more soluble in water, and not so easily crystallized; but may be obtained by proper evaporation in the state of thin scales, not unlike boracic acid. It was this super-phosphat which Proust obtained, and which he considered as a peculiar acid. The greater number of earths may be fused along with this salt, and converted into glass. It is decomposed, by Fourcroy, by the following salts: 1. Sulphats of lime, strontian, magnesia, alumina, glucina, zirconia. 2. Sulphites of barytes, lime, potash, strontian, glucina. 3. Nitrates of barytes, lime, ammonia, magnesia, glucina, alumina, zirconia. 4. Murates of barytes, strontian, lime, ammonia, magnesia, glucina, alumina, zirconia. 5. Phosphites of lime, barytes, potash. 6. Fluats, borats, and carbonats of lime, barytes, potash. This salt has been applied to various uses: It has been introduced into medicine as a purgative, and on account of its pleasant taste has of late been much used. It is usually taken in broth, which it is employed to season instead of a common salt. It may be substituted for borax to promote the soldering of metals. Mineralogists employ it very much as a flux, when they examine the action of heat on minerals by means of the blow-pipe.

11. "PHOSPHAT OF SODA AND AMMONIA. Though this salt, known to chemists by the names *microscopic salt*, and *subtile salt of urine*, was extracted from urine, and examined much sooner than any of the other phosphats, it was long before philosophers were able to form precise notions concerning its nature, or even to obtain it in a state of purity. This indeed could not be expected, till the phosphats of soda and of ammonia had been accurately examined, and their composition ascertained. Fourcroy was the first who gave a precise account of the proportion of its component parts, viz. 32 acid, 24 soda, 19 ammonia, 25 water. The properties of this salt

are nearly those of" the ad and "last species joined together. It answers better than the first of them" (N^o 2.) as a flux; because the heat soon drives off the ammonia, and leaves an excess of acid. Its specific gravity is 1.509. When exposed to the air, this salt effloresces, and gradually loses its ammonia; a fact first observed by the Duke de Chaulnes.

12. "PHOSPHAT OF STRONTIAN was first discovered by Dr HOPE; but it was more particularly described by Vauquelin in 1797. It may be formed by dissolving carbonat of strontian in phosphoric acid, or by mixing together nitrat of strontian and phosphat of soda. A white precipitate immediately falls, which is the phosphat of strontian. This salt is tasteless, insoluble in water, and not alterable by exposure to the air. It is soluble in an excess of phosphoric acid: a property which distinguishes it from phosphat of barytes. Before the blow-pipe it fuses into a white enamel, and at the same time emits a phosphoric light. It is completely decomposed by sulphuric acid, but by no other. According to Vauquelin, it is composed of 41.24 acid, 58.76 strontian. According to Fourcroy, the following salts decompose it: 1. Sulphats of barytes, lime. 2. Nitrates of lime. 3. Murats of lime, zirconia. 4. Phosphites of barytes, potash. 5. Fluats of barytes, potash, soda. 6. Carbonats of barytes, lime, potash, soda.

13. "PHOSPHAT OF YTTRIA. This salt has only been formed by Vauquelin. When the solution of phosphat of soda is mixed with the sulphat, nitrat or muriat of yttria, phosphat of yttria precipitates in gelatinous flakes."

II. PHOSPHATS, METALLINE, salts formed by the union of the phosphoric acid with different metallic bases. Of these Dr Thomson enumerates 15 species, under the different genera of their respective bases, in his 2d section "of Metalline Salts," Vol. II. and III.

i. PHOSPHAT OF ANTIMONY is mentioned but not described by Dr Thomson. "The action (he says) of phosphoric acid on antimony has never been examined. Neither is the salt better known, which that acid may be capable of forming with the oxides of that metal."

ii. PHOSPHAT OF COBALT. "Phosphoric acid dissolves cobalt, and forms a reddish coloured solution, which deposits phosphat of cobalt when saturated."

iii. PHOSPHAT OF COPPER. "Phosphoric acid does not attack copper immediately; but when allowed to remain long upon it, oxidation takes place, and the phosphat of copper is formed. This salt may be obtained with great facility, by pouring phosphat of soda into a solution of nitrat of copper. A bluish-green powder immediately precipitates, which is *phosphat of copper*. This salt is insoluble in water. Its specific gravity, according to Hassenfratz, is 1.4158. When exposed to a red heat, it loses its water, and acquires a brown colour. When violently heated, phosphated copper comes over. According to M. Chevenix, it is composed of brown oxide, 49.5, water 12, forming hydrat of copper 61.5; acid 35, and water 3.5.

iv. "PHOSPHAT OF IRON. When sulphat of iron, dissolved in water, is mixed with a solution of phosphat

phosphat of potash, a blue powder precipitates, which is phosphat of iron. This powder is insoluble in water, and does not lose its colour when exposed to the air. This salt is found *native*, and constitutes the colouring matter of a blue mineral, called *Native Prussian Blue*, found in bogs, and first analysed by Klaproth. Native Prussian Blue, when dry out of the earth, is at first often colourless; but when exposed to the air, it becomes blue.

v. "Oxy-PHOSPHAT OF IRON. This salt may be readily procured by mixing the solutions of oxy-muriat of iron and phosphat of potash or soda. A white powder immediately falls, which is oxy-phosphat of iron. This salt, like almost all the *phosphates*, is soluble in acids, but precipitated undecomposed by ammonia. It is almost insoluble in water, as it requires more than 1500 parts of that liquid to dissolve one part of oxy-phosphat. When heated violently, it melts into an ash-coloured globule. When mixed with charcoal, and heated to redness, it is converted into phosphuret of iron.

vi. "Sub-oxy PHOSPHAT OF IRON. When the oxy-phosphat of iron" (N° v.) "is treated with the pure fixed alkalis, a red, or rather brownish red powder is separated, while the alkali combines with phosphoric acid. This powder was examined by Fourcroy and Vauquelin, and found by them still to contain a portion of acid. It is therefore merely oxy-phosphat with excess of base. This salt is scarcely soluble in acids or in water; but it dissolves readily in the white of an egg, or in the serum of blood, and communicates to these liquids a brown or red colour. Its solubility is increased, and its colour heightened, by the presence of a portion of fixed alkali. This is the salt, which gives a red colour to the blood." See BLOOD, § 8.

vii. "PHOSPHAT OF LEAD. Phosphoric acid has but little action on lead; however, when allowed to remain long in contact with it, the metal is partly oxidated, and converted into an insoluble phosphat. The phosphat of lead may be easily formed by mixing the alkaline phosphates with nitrat of lead. The salt immediately precipitates in the state of insoluble powder. This salt is found native in different parts of the world." (See MINERALOGY, Part. II. Chap. VII. Clafs IV. Order VIII. Gen. III. Sp. 3.) "Its colour is then usually green or yellow, and it is often crystalized in six-sided prisms. It is insoluble in water, unless there be a considerable excess of acid; but it is soluble in pure soda, and probably forms with it a triple salt. When heated, it melts, and assumes, on cooling, a regular polyhedral form. In a red heat it is decomposed by charcoal, which absorbs the oxygen from both of its component parts. The sulphuric, nitric, and muriatic acids, decompose it by abstracting its base while cold; but these decompositions do not take place in a strong heat. The *yellow phosphat of lead*, from LEAD-HILLS in Scotland, is composed according to my analysis," (says the Dr) "abstracting the impurities with which it is usually mixed, of 18 acid and 82 white oxide."

viii. "PHOSPHAT OF LIME AND ANTIMONY. The well known medicine, called JAMES'S POW-

DER, has been shewn by the analysis of Dr Pearson, to be a compound of phosphoric acid, lime and oxide of antimony; we may therefore consider it as a triple salt." (See PHARMACY, Index.) "The energy with which it acts as an emetic is well known. From Dr Pearson's analysis, it appears to be composed of about 43 parts phosphat of lime, 57 oxide of antimony. It may be composed by calcining into a white heat, a mixture of equal parts of sulphuret of antimony and the ashes of bones."

ix. "PHOSPHAT OF MANGANESE. Phosphoric acid has but little action on manganese or its oxides, because it forms with them a salt difficultly soluble in water. But phosphat of manganese may be obtained in the form of a precipitate, by mixing an alkaline phosphat with the solution of manganese in any of the three mineral acids. This salt has not been examined."

x. "PHOSPHAT OF MERCURY. Phosphoric acid does not act on mercury, but combines with its oxide, and forms phosphat of mercury. This salt is formed most conveniently by mixing together the solutions of nitrat of mercury and phosphat of soda. The salt immediately precipitates in the state of a white powder. This salt has been lately introduced into medicine, and seems to answer equally well with the other mercurial preparations. It phosphoreces when rubbed in the dark; and when distilled it yields phosphorus, like the other metallic phosphates. Its specific gravity is 4.9835.

xi. "PHOSPHAT OF NICKEL. Phosphoric acid is capable of dissolving only a very small portion of the oxide of nickel. The solution does not yield crystals, and has scarcely even a green colour. Hence it would seem that the phosphat of nickel is nearly insoluble."

xii. "PHOSPHAT OF SILVER. Phosphoric acid does not act upon silver, but it combines readily with its oxide. Phosphat of silver is precipitated in the state of a white powder, when phosphoric acid is poured into liquid nitrat of silver. It is insoluble in water, but soluble in an excess of phosphoric acid; when heated strongly in a crucible, a little phosphorus comes over, and phosphuret of silver remains in the retort."

xiii. "PHOSPHAT OF TIN. Phosphoric acid (says our learned author) has scarcely any action on tin, unless when it is exposed dry, and mixed with that metal, to the action of a strong heat. In that case part of the acid is decomposed, its phosphorus combines with one portion of the tin, and forms a phosphorat, while the oxide of tin unites with the undecomposed acid, and forms a phosphat. This salt precipitates also, when the alkaline phosphates are mixed with a solution of muriat of tin; but its properties have never been examined."

xiv. "PHOSPHAT OF URANIUM. Phosphoric acid forms, with oxide of uranium, yellowish white flakes, scarcely soluble in water. The salt may be precipitated by adding phosphoric acid to the acetite of uranium.

xv. "PHOSPHAT OF ZINC. Phosphoric acid attacks zinc with effervescence, and a white powder is gradually deposited, which is the *phosphat of zinc*. The salt may be formed also by pouring an alkaline

kalkine phosphat into the solutions of sulphur, nitrat, or muriat of zinc. It is nearly soluble in water."

To PHOSPHATE. *v. a.* To combine any base with phosphoric or phosphorous acid.

(1.) PHOSPHATED, *part. adj.* Combined with phosphoric or phosphorous acid.

(2.) PHOSPHATED IRON, a species of salt of iron, of which the ingenious Dr Thomson gives the following account: "Phosphoric acid has but little action upon iron. However, if that metal remain exposed to the contact of phosphoric acid, or even to the solutions of salts that contain that acid, it is gradually oxidated, and converted into phosphat of iron. The properties of phosphated iron have not been examined with attention. Scheele has shewn, that the acid combines with both oxides, and forms both a *phosphat* and *oxy phosphat of iron*. Fourcroy and Vauquelin have lately ascertained that there are two varieties of this last salt; one of which had been described by Bergman, Meyer, Klaproth, and Scheele, and another with excess of base, and consequently a *sub-oxy-phosphat*, which these philosophers first observed." See PHOSPHAT, N^o II, 4, 5, and 6.

PHOSPHIS, } a salt formed by the union of
PHOSPHITE, } the phosphorous acid, with
different bases. See CHEMISTRY, *Index*; and *Vocab. II.* Phosphites form the 8th genus of salts in Dr Thomson's System of Chemistry. "These salts (says he) have been lately examined, for the first time, and their properties described, by Fourcroy and Vauquelin. They may be distinguished by the following properties: 1. When heated, they emit a phosphorecent flame. 2. When distilled in a strong heat, they give out a little phosphorus, and are converted into phosphats. 3. Detonate, when heated with nitrat or oxy-muriat of potash, and are converted into phosphats. 4. Converted into phosphats by nitric and oxy-muriatic acid. 5. Fusible, in a violent heat, into glass. The phosphites at present known amount to seven," or rather eight: viz.

1. "PHOSPHITE OF ALUMINA may be prepared by saturating phosphorus acid with alumina, and then evaporating the alumina to a proper consistence. It does not crystallize, but forms a glutinous mass, which dries gradually, and does not afterwards attract moisture from the air. Its taste is astringent. It is very soluble in water. When heated it frothes, and gives out phosphorus, but it does not readily melt into a globule of glass."

2. "PHOSPHITE OF AMMONIA may be prepared by dissolving carbonat of ammonia in phosphorous acid, and evaporating the solution slowly till it deposits crystals of phosphite of ammonia. It crystallizes sometimes in long transparent needles, and sometimes in four-sided prisms terminated by four-sided pyramids. It has a very sharp saline taste. It is soluble in two parts of water at the temperature of 60°, and still more soluble in boiling water. When exposed to the air it attracts moisture, and becomes slightly deliquescent. When distilled in a retort, the ammonia is disengaged, partly liquid and partly in the state of gas, holding phosphorus in solution, which becomes luminous when mixed with oxygen gas. Before the blow-pipe on charcoal, it boils and loses its water of crystalliza-

tion: it becomes surrounded with a phosphorescent light, and bubbles of phosphorated hydrogen gas are emitted, which burn in the air with a lively flame, and form a fine coronet of phosphoric acid vapour. This gas is emitted also when the salt is heated in a small glass bulb, the tube belonging to which is plunged under mercury. This salt is composed of 26 acid, 51 ammonia, and 23 water.

3. "PHOSPHITE OF AMMONIA AND MAGNESIA. This salt may be formed by mixing together the aqueous solutions of its two component parts. It is sparingly soluble in water, and may be obtained in crystals; but its properties have not been examined with precision."

4. PHOSPHITE OF BARYTES may be formed by pouring phosphorous acid into barytic water, or this last water into a solution of phosphite of soda. In either case, phosphite of barytes precipitates in the form of a white powder. It is tasteless, and but very sparingly soluble in water, unless there be an excess of acid. It is not altered by exposure to the air. Before the blow-pipe it melts, and is surrounded with a light so brilliant that the eye can scarcely bear it. The globule which it forms becomes opaque as it cools. It is composed of 47.7 acid, 51.3 barytes, and 7 water.

5. PHOSPHITE OF LIME may be formed by dissolving lime in phosphorous acid; when the saturation is complete, the salt precipitates in the state of a white powder. It is tasteless, and insoluble in water; but it dissolves in an excess of acid, and forms a *superphosphite*. This last salt may be obtained in prismatic crystals, by evaporating the solution.—This salt is not altered by exposure to the air. When heated, it phosphoreces, and emits a little phosphorus. In a violent heat, it melts into a transparent globule. It is composed of 34 acid, 51 lime, and 15 water."

6. PHOSPHITE OF MAGNESIA is best formed by mixing together aqueous solutions of phosphite of potash or soda, and sulphat of magnesia; the phosphite of magnesia gradually precipitates in beautiful white flakes. It has no sensible taste. It is soluble in 400 parts of water, at the temperature of 60°, and scarcely more soluble in boiling water. When its solution is evaporated slowly, a transparent pellicle forms on its surface: flakes are deposited, and towards the end of the process, small tetrahedral crystals are precipitated. When exposed to the air it effloresces. When heated, it phosphoreces and melts into a glass, which becomes opaque on cooling. It is composed of 44 acid, 20 magnesia, 36 water."

7. PHOSPHITE OF POTASS is formed by dissolving carbonat of potash in phosphorous acid, and evaporating the solution slowly, till it deposits crystals of phosphite of potash. It crystallizes in four-sided octangular prisms, terminated by dihedral summits. Its taste is sharp and saline. It is soluble in 3 parts of cold water, and still more soluble in boiling water. It is not altered by exposure to the air. When heated, it decrepitates, and then melts into a transparent globule, which becomes opaque on cooling. It does not phosphorece so evidently as the other phosphites, perhaps because it contains an excess of potash, which saturates the phosphoric acid as it forms. It is composed of 39.5 acid, 49.5 potash, 11 water.

8 "PHOSPHITE,

8. "PHOSPHITE OF SODA. This salt (says the Dr) may be prepared exactly in the same way as phosphite of potash;" only substituting (we suppose) carbonate of soda for the carbonate of potash. — "Its crystals are irregular four-sided prisms, or elongated rhomboids. Sometimes it assumes the form of square plates, or of plumose crystals. Its taste is cooling and agreeable. It is soluble in two parts of cold water, and scarcely more soluble in boiling water. When exposed to the air, it effloresces. Before the blow-pipe it emits a beautiful yellow flame, and melts into a globule, which becomes opaque on cooling. It is composed of 16.3 acid, 23.7 soda, and 60 water. It is decomposed by, 1. Sulphate of lime, barytes, strontian, magnesia; 2. Nitrates and muriates of lime, barytes, strontian, magnesia.

* PHOSPHOR. See PHOSPHORUS, § 1.

PHOSPHORACEOUS. *adj.* [from *phosphorus*.] Resembling phosphorus; partaking of the nature of phosphorus.

To PHOSPHORATE. *v. a.* To combine the phosphoric or phosphorous acid with any base; to endue any substances with the properties of phosphorus.

(1.) PHOSPHORATED. *part. adj.* combined with phosphoric or phosphorous acid; endued with the properties of phosphorus.

(2.) PHOSPHORATED AZOTIC GAS, an aerial fluid, thus described by the ingenious Dr Thomson in his *Elem. of Chem.* vol. i. p. 67, 68. "Azotic gas very readily dissolves phosphorus plunged into it. Its bulk is increased about one 40th, and *Phosphorated Azotic Gas* is the result. When this gas is mixed with oxygen gas it becomes luminous, in consequence of the combustion of the dissolved phosphorus. The combustion is most rapid when bubbles of phosphorated azotic gas are let up into a jar full of oxygen gas. When *phosphorated oxygen gas*, and phosphorated azotic gas, are mixed together, no light is produced, even at the temperature of 82°.

(3.) PHOSPHORATED HYDROGEN GAS, a very combustible aerial fluid, which, according to our learned author, is thus produced:—"When phosphorus is introduced into a glass jar of hydrogen gas standing over mercury, and then melted by means of a burning glass, the hydrogen gas dissolves a very great proportion of it. The new compound, thus formed, has received the name of *phosphorated hydrogen gas*. It was discovered in 1783 by Mr Gengembre, and in 1784 by Mr Kirwan, before he became acquainted with the experiments of Gengembre. But for the fullest investigation of its properties, we are indebted to Mr Raymond; who published dissertations on it in 1791 and 1800.—It has a very fetid odour, exactly similar to the smell of putrid fish. When it comes into contact with common air, it burns with great rapidity; and if mixed with it, detonates violently. Oxygen gas produces a still more rapid and brilliant combustion. When bubbles of it are made, to pass up through water, they explode in succession, as they reach the surface of the liquid; a beautiful coronet of white smoke is formed, which rises slowly to the ceiling. This gas is the most combustible substance known. It is obvious that its combustion is merely the com-

bination of its phosphorus and its hydrogen with the oxygen of the atmosphere; the products, of course, are phosphoric acid and water. These two substances mixed, or rather combined, constitute the coronet of white smoke. Pure water, agitated in contact with this gas, dissolves at the temperature of between 30° and 60° about the 4th part of its bulk of it. The solution is of a colour not unlike that of roll sulphur; it has a very bitter and disagreeable taste, and a strong unpleasant odour. When heated nearly to boiling, the whole of the phosphorated hydrogen gas is driven off unchanged, and the water remains behind in a state of purity. When exposed to the air, the phosphorus is gradually deposited in the state of red oxide, the hydrogen gas makes its escape, and at last nothing remains but pure water." *Syst. Chem.* Vol. 1. p. 58.

(4.) PHOSPHORATED OXIDE OF MERCURY, BLACK, an oxide thus described by Dr Thomson: "Mr Pelletier, after several unsuccessful attempts to combine phosphorus and mercury, at last succeeded by distilling a mixture of red oxide of mercury and phosphorus. Part of the phosphorus combined with the oxygen of the oxide, and was converted into an acid; the rest combined with the mercury. He observed that the mercury was converted into a black powder before it combined with the phosphorus. On making the experiment, I found that phosphorus combines very readily with the black oxide of mercury, when melted along with it in a retort filled with hydrogen gas, to prevent the combustion of the phosphorus. As Pelletier could not succeed in his attempts to combine phosphorus with mercury in its metallic state, we must conclude, that it is not with mercury, but with the black oxide of mercury, that the phosphorus combines. The compound, therefore, is not *phosphuret of mercury*, but *black phosphorated oxide of mercury*."

(5.) PHOSPHORATED OXIDE OF ZINC. "Phosphorus (says Dr Thomson) combines with oxide of zinc; a compound which Margraff had obtained during his experiments on phosphorus. When twelve parts of oxide of zinc, twelve parts of phosphoric glass, and two parts of charcoal powder, are distilled in an earthen ware retort, and a strong heat applied, a metallic substance sublimes, of a silver white colour, which, when broken, has a vitreous appearance. This, according to Pelletier, is *phosphorated oxide of zinc*. When heated by the blowpipe, the phosphorus burns, and leaves behind a glass, transparent white in fusion, but opaque after cooling. Phosphorated oxide of zinc is obtained also when two parts of zinc and one of phosphorus are distilled in an earthen retort. The products are, 1. zinc; 2. oxide of zinc; 3. a red sublimate, which is phosphorated oxide of zinc; 4. needle form crystals, of a metallic brilliancy, and a bluish colour."

PHOSPHOREAL. *adj.* Of or belonging to phosphorus; resembling phosphorus; illuminating brilliantly like phosphorus.

To PHOSPHORESCENCE. *v. n.* To take fire and burn with a lively brilliant flame like phosphorus; to become phosphoric.

PHOSPHORESCENCE. *n. s.* The property or quality of burning like phosphorus.

PHOSPHORESCENT.

PHOSPHORESCENT. *part. adj.* Flaming or burning like phosphorus; partaking of the nature or acid of phosphorus.

PHOSPHORET. See **PHOSPHURET**.

(1.) **PHOSPHORIC.** *adj.* Of or belonging to phosphorus; partaking of the nature of phosphorus.

(2.) **PHOSPHORIC ACID**, or the **ACID OF PHOSPHORUS**, formerly called the **MICROCOSMIC ACID**. See **CHEMISTRY, Index**. "Phosphoric Acid" (says Dr Thomson, in his *Syst. of Chem.* Vol. I. p. 27.) may be formed by setting fire to a quantity of phosphorus, contained in a vessel filled with oxygen gas. The phosphorus burns with great rapidity, and a great number of white flakes are deposited, which are *phosphoric acid* in a state of purity. It may be obtained, too, by heating phosphorus under water till it melts, and then causing a stream of oxygen gas to pass through it by means of a tube. In this case, the acid, as it forms, combines with the water; but the liquid may be evaporated off by the application of heat, and then the acid remains behind in a state of purity. It may be procured also by distilling off nitric acid from phosphorus; but the process is expensive, as the quantity of nitric acid required is considerable. Phosphoric acid remained unknown till after the discovery of phosphorus. Boyle is perhaps the first chemist who mentions it; but Margraaff first examined its properties, and demonstrated it to be a peculiar acid. Its properties were afterwards more completely investigated by Bergman, Scheele, Lavoisier, Pearson, Fourcroy, and Vauquelin, and several other distinguished chemists. Lavoisier first proved that it is composed of phosphorus and oxygen. From his experiments it follows, that it is composed of about 39 phosphorus and 61 oxygen. Phosphoric acid, when pure, is solid, colourless, and transparent. It reddens vegetable blues; it has no smell; its taste is very acid, but it does not destroy the texture of organic bodies. When exposed to the open air, it soon attracts moisture, and deliquesces into a thick oily-like liquid, in which state it is usually kept by chemists. When exposed to the fire in a platinum crucible, its water gradually evaporates, and leaves it in the state of a transparent jelly. If the heat be increased, it boils and bubbles, owing to the separation of the remainder of its water, accompanied with a small portion of acid. At a red heat it remains in the form of a transparent liquid, and when cooled assumes the form of the purest crystal. In this state it is known by the name of **PHOSPHORIC GLASS**. This glass is merely phosphoric acid totally deprived of water. It has an acid taste, is very soluble in water, and deliquesces when exposed to the air. The specific gravity of this acid, in a state of dryness, is 2.687; in the state of glass, 2.8516; in the state of deliquescence, 1.417.—When in the state of white flakes it dissolves in water with a hissing noise, similar to that made by red hot iron plunged into water. When in the state of glass it dissolves much more slowly. The heat evolved, during the combination of this acid and water, is much inferior to that evolved when sulphuric acid enters into a similar combination. Phosphoric acid obtained by deliquescence, when mixed with

an equal quantity of distilled water, acquired so little heat as to raise the thermometer only one degree, as Mr Sage observed. M. Lavoisier raised the thermometer from 50° to 63°, by mixing phosphoric acid boiled to the confluence of a syrup with an equal quantity of water; and from 50° to 104° when the acid was as thick as turpentine. Oxygen gas has no action on phosphoric acid, whatever be the temperature. Neither is it decomposed or altered by any of the simple combustibles, except charcoal; which, though it has no action on it while cold, at a red heat decomposes it completely; carbonic acid is formed, and phosphorus sublimed. This is the common process for obtaining **PHOSPHORUS**. This acid is incapable of combining with metals; but when in a liquid state it is capable of oxidating some of them, especially when assisted by heat; at the same time hydrogen gas is emitted. Hence the oxidation is owing to the decomposition of water. Phosphoric acid is capable of oxidating iron, tin, lead, zinc, antimony, bismuth, manganese. When fused with several of these metals, as tin, iron, and zinc, it is converted into phosphorus; a proof that they have a stronger affinity for oxygen. It does not act upon gold, platinum, silver, copper, mercury, arsenic, cobalt, nickel. It appears, however, to have some action on gold in the *dry way*, as it is called; for when fused with gold leaf it assumes a purple colour; a proof that the gold has been oxidated. Phosphoric acid combines with acids, earths, and metallic oxides, and forms with them salts, named *Phosphates*. (See **PHOSPHATS**, § I, II.) Its affinities are as follow: Barytes, strontian, lime, potash, soda, ammonia, magnesia, glucina, alumina, zirconia, metallic oxides, silica. This acid is too expensive to be brought into common use. If it could be procured at a cheap rate, it might be employed with advantage, not only in several important chemical manufactures, but also in medicine, and perhaps even for the purposes of domestic economy." (*Syst. of Chem.* vol. iii. p. 27.—30. Our learned author adds, vol. iv. p. 355, "The phosphoric acid is by far the most abundant of all the acids found in animals. Combined with lime, it constitutes the basis of *bone*; and the phosphate of lime is found in the muscles and almost all the solid parts of animals; neither are there many of the fluids from which it is absent. In the blood phosphoric acid is found combined with oxide of iron, and in the urine it exists in excess, holding phosphate of lime in solution."

(3.) **PHOSPHORIC GAS**. See **CHEMISTRY, Index**.

(4.) **PHOSPHORIC GLASS**. See § 2; and **CHEMISTRY, Index**.

(5.) **PHOSPHORIC MATCHES**. } See **CHEMISTRY,**

(6.) **PHOSPHORIC OXIDES**. } *Index*.

(7.) **PHOSPHORIC SPAR**.

PHOSPHORITE, a name formerly given to the phosphate of lime. See **MINERALOGY, Part II. Chap. IV. Order II. Gen. I. Sp. 3. and PHOSPHAT**, § I. N° 6.

PHOSPHORIZED. *adj.* a word used by some chemists for *phosphorated*. See **PHOSPHORATED**.

(1.) **PHOSPHOROUS.** *adj.* Of or belonging to phosphorus; partaking of the nature of phosphorus;

phorus: combined with the phosphoric or phosphorous acid.

(2.) **PHOSPHOROUS ACID.** See **CHEMISTRY, Index.** "The acid, (says Dr Thomson,) "obtained by the burning of phosphorus, differs according to the rapidity of the combustion; or, which is the same thing, according to the temperature in which the process is conducted. When burnt in oxygen gas, in which case the temperature is the highest possible, the product is *phosphoric acid*, which contains a *maximum* of oxygen: When allowed to burn gradually at the common temperature of the air, the product is *phosphorous acid*, which contains a *minimum* of oxygen. The difference between these two acids had been remarked by Sage, by Proust, and by Morveau; but it was Lavoisier who first, in 1777, demonstrated, that they form different compounds with other bodies, and that the difference between them is owing to the different proportions of oxygen which they contain. Phosphorous acid is prepared by exposing phosphorus during some weeks, to the ordinary temperature of the atmosphere, even in winter; when the phosphorus undergoes a slow combustion, and is gradually changed into a liquid acid. For this purpose, it is usual to put small pieces of phosphorus on the inclined side of a glass funnel, through which the liquor, which is formed, drops into the bottle placed to receive it. From one ounce of phosphorus about 3 oz. of acid liquor may be thus prepared. It was called *phlogificated phosphoric acid* by Morveau, from a supposition that it was a compound of phosphoric acid and phlogiston. Phosphorous acid thus prepared, is a viscid liquid, of different degrees of consistence, adhering like oil to the sides of the glass vessel in which it is contained. It emits the smell of garlic, especially when heated. Its taste is acid, like that of phosphoric acid, and it produces the same effect upon vegetable colours. It combines with water in every proportion, but it cannot, like phosphoric acid, be obtained in a concrete state. When heated, part of the water which it contains is at first evaporated; then large bubbles of air rise to the surface, there they break, and emit a dense white smoke, or even take fire, if the experiment be performed in an open vessel. The emission of these bubbles of phosphorated hydrogen gas continues for a long time: when the process is finished, the acid which remains is no longer *phosphorous* but *phosphoric acid*. These phenomena would lead one to suspect, that phosphorous acid is not, as has been hitherto supposed, a compound of phosphorus and oxygen, but that it is phosphoric acid, saturated with phosphorated hydrogen gas. This acid is converted into phosphoric acid by exposure to air or oxygen gas. The process is exceedingly slow, and the conversion is never complete. It succeeds better when the acid is diluted with a great proportion of water. Phosphorous acid is not acted upon by any of the simple combustibles, except charcoal, and perhaps hydrogen. Charcoal decomposes it at a red heat, as well as phosphoric acid. The products are carbonic acid and phosphorus. Its action on metals is exactly similar to that of phosphoric acid, excepting only that the hydrogen gas, evolved during the oxidation

tion of the metals, has a fetid smell, and holds phosphorus in solution. It combines with alkalies, earths, and metallic oxides, and forms compounds distinguished by the name of *Phosphites*." (See **PHOSPHITE**, No 1-8.) "Sulphuric acid produces no change upon it while cold; but at a boiling heat, it parts with some of its oxygen, and the phosphorous acid is converted into phosphoric acid. Nitric acid, also, when assisted by heat, converts it readily into phosphoric acid. This furnishes us with by far the best process for obtaining **PHOSPHORIC ACID** at present known. Mix phosphorous acid, obtained by slow combustion, with one 8th of its weight of nitric acid of the same specific gravity 1.3, and distil. The nitric acid is decomposed, and pure phosphoric acid remains behind. For this process we are indebted to Fourcroy. (ii, 86.) The affinities of phosphorus acid, as ascertained by Bergman, Fourcroy, and Vauquelin, observe the following order: Lime, barytes, strontian, potash, soda, ammonia, glucina, alumina, zirconia, metallic oxides." *Syst. of Chem.* Vol. II. p. 30-33.

(3.) **PHOSPHOROUS HYDROGEN GAS**, a compound aerial fluid, thus produced: "When bits of phosphorous" (says our learned author) "are kept for some hours in hydrogen gas, part of the phosphorus is dissolved. This compound gas, to which Fourcroy and Vauquelin, the discoverer of it, have given the name of *phosphorous hydrogen gas*, has a slight smell of garlic. When bubbles of it are made to pass into oxygen gas, a very brilliant bluish flame is produced, which pervades the whole vessel of oxygen gas. It is obvious, that this flame is the consequence of the combustion of the dissolved phosphorus." (*Syst. Chem.* Vol. I. p. 57.) Perhaps it is by this preparation of the hydrogen gas, or by that of the phosphorated hydrogen gas, that Mr Lebon illuminates his **THERMOLAMPE**. See **HYDROGEN GAS**, and **PHOSPHORATED**, § 3.

(1.) * **PHOSPHORUS.** See **PHOSPHOR. a. f.** [*phosphorus*, Lat.] 1. The morning star.—
Why sit we sad when *phosphorus* shines so clear?

Pope.

2. A chemical substance which, exposed to the air, takes fire.—*Phosphorus* is obtained by distillation from urine putrified, by the force of a very vehement and long continued fire. *Pemberton*.—Of lambent flame, you have whole sheets in a handful of *phosphor*. *Addison*.—Liquid and solid *phosphorus* show their flames more conspicuously when exposed to the air. *Cheyne*.

(2.) **PHOSPHORUS**, (§ 1. *def.* a.) is a name given to certain substances which shine in the dark without emitting heat. By this circumstance they are distinguished from the **PYROPHORI**, which, though they take fire on being exposed to the air, are yet entirely destitute of light before this exposure. See **CHEMISTRY, Index**. Besides these however, it has been found that almost all terrestrial bodies, upon being exposed to the light, will appear luminous for a little time in the dark, metals only excepted. This points out a general division of the phosphors into two classes) namely, such as require to be exposed to the light either of the sun or of some artificial fire, before they become luminous; and such as do not. Of the former

former kind are the Bolognian phosphorus, Canton's phosphorus, the phosphori from earths, &c. Of the latter kind, are rotten wood, the skins of fishes, and the phosphorus of urine. (See LIGHT, § 9, 19.) To these we may add some other substances which become luminous in another way; viz., the mass which remains after the distillation of volatile sal ammoniac with chalk, loaf sugar, and the phosphorus of urine dissolved in spirit of wine. The first, which is a composition of the muriatic acid of the sal ammoniac with the chalk, after being fused in a crucible, becomes luminous when struck with any hard body; white sugar is luminous when grated or scraped in the dark; and the solution of phosphorus in spirit of wine, is luminous only when dropped into water; and even then the light is only perceived where the drops fall into the liquid. One part of phosphorus communicates this property to 600,000 parts of spirit of wine. There is a remarkable difference between the light of rotten wood, fishes, and that of phosphorus of urine, even when it is not in an ignited state; for this last does not cease to be luminous even when included within an exhausted receiver; the contrary of which happens to rotten wood and fishes. If air is strongly blown upon this phosphorus from a pair of bellows, it will extinguish its light for some time, which is not the case with the other kinds. When kept in water, and placed in a warm air, the phosphorus of urine discharges such large and bright flashes into the air above it, as are apt to surprise, and even frighten those who are unacquainted with it. These convulsions are contracted in their passage through the water, but expand as soon as they get above it; however, the experiment can only be tried to advantage in warm weather, and in a cylindrical glass not above three quarters filled with water. The phenomena exhibited by the earthy phosphori are very curious: both on account of the singular circumstances in which they exhibit their light, and the varieties observed in the light itself. All these emit no light till they have been first exposed to the light of the sun, or some other luminous body. After that, they are luminous in the dark for a considerable time; but by degrees their light dies away, and they emit no more till after another exposure to the sun. But if this happens to be too long continued, they are then irrecoverably spoiled. The same thing will happen from being too much heated without any exposure to light. If a phosphorus, which has just ceased to be luminous, be heated, it will again emit light without any exposure to the sun; but by this its phosphoric quality is weakened, and will at last be destroyed. Indeed these phosphori are so tender, and impatient either of light or heat, that the best method of rendering them luminous occasionally, is by discharging an electric bottle near them. The light of the flash immediately kindles the phosphorus, and it continues luminous for a considerable time, after which it may again be revived by another flash, and so on. However, with all the care that can be taken, these phosphori are very far from being perpetual; nor has any method been yet fallen upon to render them so. The singularities in the light

of the phosphori are, that they emit light of many different and most beautiful colours. This difference of colours seems to be natural to them; for some will at first emit a green, others a red, others a violet, &c. at their formation. However, the best kinds agree in this strange property, that if they are exposed to a red light, they emit a red light in the dark; and the same of other colours. But this must not be understood without limitation: nor is the phosphoreal light at any time so bright as the luminous body, whatever it was, by which it was kindled. Neither are we to imagine, that any particular phosphorus has a particular kind of light appropriated to it; for the same phosphorus which at one time emits a purple light, will at another emit a green, or a light of some other colour.

(3.) "PHOSPHORUS," (says Dr Thomson,) "when pure, is of a clear, transparent, yellowish colour; but when kept some time in water, it becomes opaque internally, and then has a great resemblance to white wax. Its consistence is nearly that of wax; it may be cut with a knife, or twisted to pieces with the fingers. It is insoluble in water. Its specific gravity is 1.714. It melts at the temperature of 99°. Care must be taken to keep phosphorus, when melted, under water; for it is so combustible that it cannot be melted in the open air without taking fire. When phosphorus is newly prepared, it is always dirty, being mixed with a quantity of charcoal-dust and other impurities. These may be separated by melting it under water, and squeezing it while melted, through a piece of clean shamoy leather." The subsequent operations are described under CHEMISTRY, as well as the history of its discovery in 1669, by Brandt, Boyle, and Kussckel; and the fraud respecting it by Kraft. All these chemists made it from urine; but in 1769, Gahn, a Swedish chemist, discovered that phosphorus is contained in bones; after which, it was repeatedly extracted from them by Scheele, Chaptal, and others. Dr Thomson recommends the following process of Fourcroy and Vauquelin: "Let a quantity of bones be burnt till they cease to smoke, or to give out any odour; and let them afterwards be reduced to a fine powder. Put this powder into a basin of porcelain; dilute it with 4 times its weight of water, and then add gradually (stirring the mixture after every addition) two thirds of the weight of the powder of sulphuric acid. The mixture becomes hot, and a vast number of air bubbles are extricated. Leave the mixture in this state for 24 hours, taking care to stir it well every now and then with a glass or porcelain rod, to enable the acid to act upon the powder. The whole is now to be poured on a filter of cloth; the liquid which runs through is to be received in a porcelain basin; and the white powder which remains on the filter, after pure water has been poured on it repeatedly, may be thrown away. Into the liquid in the porcelain basin, which has a very acid taste, sugar of lead is to be poured slowly; a white powder immediately falls to the bottom: the sugar of lead must be added as long as any of this powder is formed. Throw the whole upon a filter. The white powder which remains is to be

be well washed, allowed to dry, and then mixed with one 6th of its weight of charcoal powder. This mixture is to be put into the earthen ware retort; A, Plate 173. The retort is to be put into a sand bath B, and the beak of it plunged into a vessel of water C, just under the surface. Heat is now to be applied gradually till the retort be made red hot. A vast number of air bubbles issue from the beak of the retort, some of which take fire when they come to the surface of the water. At last there drops out a substance, which has the appearance of melted wax, and which congeals under the water. This substance is *phosphorus*.—"If the air be excluded, phosphorus evaporates at 210° , and boils at 554° . When phosphorus is exposed to the atmosphere, if the temperature be not lower than 43° , it emits a white smoke, which has the smell of garlic, and is luminous in the dark. It is occasioned by the gradual combustion of the phosphorus, which at last disappears. The combustion of phosphorus, like that of sulphur, is nothing else than its combination with oxygen: for during the process, no new substance appears, except the acid, accompanied with much heat and light.—Phosphorus is capable of combining with many other bodies: the compounds produced are called *PHOSPHURATES*. Phosphorus, used internally, is poisonous. In very small quantities, (as one 4th of a grain,) when very minutely divided, it is said by Leroi to be very efficacious in restoring the force of young persons exhausted by sensual indulgences." *Syst. of Chem.* vol. I. p. 34—43.

(4.) *PHOSPHORUS*, in astronomy, the name among the Greeks for the *Morning Star*, or the planet *VENUS*, when she rises before the Sun; called by the Latins *LUCIFER*, and by the French, *Etoile de Berger*.

(5.) *PHOSPHORUS*, *BALDWIN'S*. See *CHEMISTRY, Index*.

(6.) *PHOSPHORUS*, *BOLOGNIAN*. See *BOLOGNIAN, and CHEMISTRY, Index*.

(7.) *PHOSPHORUS*, *LIQUOR OF*. See *CHEMISTRY*.

(8.) *PHOSPHORUS*, *MEDICINAL EFFECTS OF*. This extraordinary substance has lately been employed as a medicine, by Alphonfus Leroi, professor at the Medical School of Paris. Its effects are thus described in the *Bulletin de la Société Philomatique*, 1798. 1. Phosphorus, administered internally in consumptions, gives a certain degree of activity to life, and revives the patients without raising their pulse. Leroi being called to a woman, at the point of death, who was quite worn out in that disease, which she had laboured under for 3 years, in compliance with the desire of her husband, composed a medicine of a portion of syrup diluted with water, in which a few ticks of phosphorus had been kept. Next day he found herself much better. She was greatly revived for a few days; and did not die till about a fortnight after. 2. Leroi himself was so imprudent, as to take 2 or 3 gr. of solid phosphorus, combined only with treacle, from which he experienced the most dreadful symptoms. At first he felt a burning heat in the whole region of his stomach, which seemed to be filled with gas that escaped by the mouth. Being dreadfully tormented, he tried to vomit, but in vain; and found re-

lief only by drinking cold water from time to time. His uneasy sensations were at length allayed: but next morning he was engaged with an astonishing muscular force, and was urged with an almost irresistible impulse to try its energy. The effects of this medicine at length ceased, adds the author, *a la suite d'un priapiisme violent!*

3. In many cases he employed, and still employs, phosphorus internally with great benefit, to restore and revive young persons exhausted by excesses. He divides the phosphorus into very small particles, by shaking it in a glass filled with boiling water. He continues to shake it, plunging it into cold water, and thus obtains a kind of precipitate of phosphorus, exceedingly fine, which he bruises slowly with a little oil and sugar, or afterwards uses as a liquid electuary, by diffusing the whole in the yolk of an egg. By this medicine he has made astonishing cures, and restored the strength of his patients in a very short time.

4. In malignant fevers, the use of phosphorus internally, to check the progress of gangrene; has succeeded beyond expectation. The author relates several instances. 5. Pelletier told him, that having left, through negligence, some phosphorus in a copper basin, that metal was oxidated; and remained suspended in the water. Having thoughtlessly thrown out the water in a small court in which ducks were kept, these animals drank of it, and all died. *Mais le male* (says the author) *couvrit toutes les femelles jusqu'au dernier instant de sa vie!*" This accords with the effect experienced by Leroi.

6. He relates a fact which proves the astonishing divisibility of phosphorus. Having administered to a patient some pills, in which there was above $\frac{1}{2}$ of a grain of phosphorus, and having occasion afterwards to open the body, he found all the internal parts luminous; and even the hands of the person who had performed the operation, though washed, and well dried, retained a phosphoric splendor for a long time after. 7. The phosphoric acid, used as a lemonade, has been serviceable in the cure of a great number of diseases. 8. Leroi says, that he oxidated iron with phosphorus, and obtained, by the common means, a white oxyd, almost irreducible, which he thinks may be employed with advantage in the arts, particularly in painting with oil, and in enamel, instead of the white oxyd of lead. This white oxyd of iron occasioned violent retchings to the author, who ventured to put a small particle of it on his tongue. He therefore considers this oxyd as a terrible poison. He was not able to reduce it but by fixed alkali, and the glass of phosphorus. 9. By phosphorus he decomposed and separated from their bases the sulphuric, muriatic, and nitric acids; by the phosphoric acid he transmuted earths; and with calcareous earth he can make magnesia. By phosphorus he can effect the dissipation of rubies, the fusion of emeralds, and the vitrification of mercury. (*Philos. Mag.* Vol. 2.) If British practitioners wish to try this medicine, they would need, after Leroi's experiments, to do it with the utmost caution.

(9.) *PHOSPHORUS OF HOMBERG* is the same with the *MURIAT OF LIME*. See *CHEMISTRY, Index*.

PHOSPHURE, } or **PHOSPHURET,** [*phosphu-*
PHOSPHURET, } *retum,*] a compound salt
produced by a combination of non-oxdated
phosphorus with different bases. Of these 20 are
described by Dr Thomson, in his *Syst. of Chem.*
Vol. 1.

1. **PHOSPHURET OF ANTIMONY.** "When equal parts of antimony and phosphoric glass are mixed, with a little charcoal powder, and melted in a crucible, phosphuret of antimony is produced. It is of a white colour, brittle, appears laminated when broken, and at the fracture are a number of small cubic facettes. When melted, it emits a green flame, and the white oxyd of antimony sublimes. It may likewise be prepared by fusing equal parts of antimony and phosphoric glass; or by dropping phosphorus into melted antimony." *Syst. of Chem.* vol. 1. 188.

2. **PHOSPHURET OF ARSENIC.** "Arsenic combines readily with phosphorus. The phosphuret may be formed by distilling equal parts of its ingredients over a moderate fire. It is black and brilliant, and ought to be preserved in water. It may be formed also by putting equal parts of phosphorus and arsenic into water, and keeping the mixture moderately hot." *Syst. of Chem.* vol. 1. p. 197.

3. "**PHOSPHURET OF BARYTES** may be formed, by putting a mixture of phosphorus and barytes into a glass tube close at one end, and heating the mixture, by putting the tube upon burning coals. The combination takes place very rapidly. This phosphuret is of a dark brown colour, very brilliant, and very fusible. When moistened, it exhales the odour of phosphated hydrogen gas. When thrown into water, it is gradually decomposed, phosphated hydrogen gas is emitted, which takes fire when it comes to the surface of the water, and the phosphorus is gradually converted into phosphoric acid." *Ibid.* p. 421.

4. **PHOSPHURET OF CARBON.** "Phosphorus is capable of combining with carbon or charcoal. *Phosphuret of carbon* was first examined by Mr Proust, the celebrated professor of chemistry at Segovia in Spain. It is the red substance which remains behind, when new made phosphorus is strained through shamoy leather. To separate from it a small quantity of phosphorus which it contains in excess, it should be put into a retort, and exposed for some time to a moderate heat. What remains behind is the pure phosphuret of carbon. It is a light flocky powder, of a lively orange red, without taste or smell. When heated in the open air, it burns rapidly, and a quantity of charcoal remains behind." *Ibid.* p. 51.

5. "**PHOSPHURET OF COBALT** may be formed by heating the metal red hot, and then gradually dropping in small bits of phosphorus. It contains about one 15th of phosphorus. It is white and brittle, and, when exposed to the air, soon loses its metallic lustre. The phosphorus is separated by heat, and the cobalt is oxydated. This phosphuret is much more fusible than pure cobalt." *Ibid.* p. 204.

6. "**PHOSPHURET OF COPPER** was first formed by Margraf, by distilling phosphorus and oxide of copper together. It formed most easily by

projecting phosphorus into red hot copper. It is of a white colour, and, according to Pelletier, is composed of 20 parts of phosphorus, and 80 of copper. It is harder than iron; it is not ductile, yet cannot easily be pulverised. Its specific gravity is 7.1220. It crystallizes in four-sided prisms. It is much more fusible than copper. When exposed to the air, it loses its lustre, becomes black, falls to pieces, the copper is oxydated, and the phosphorus converted into phosphoric acid. When heated, the phosphorus burns, and leaves the copper under the form of black scoriae. M. Pelletier formed this phosphuret by melting 16 parts of copper, 16 of phosphoric glass, and one of charcoal." *Ibid.* p. 117.

7. **PHOSPHURET OF GOLD.** "Mr Pelletier combined gold with phosphorus, by melting together in a crucible half an ounce of gold and an ounce of phosphoric glass, surrounded with charcoal. The *phosphuret of gold* thus produced was brittle, whiter than gold, and had a crystallized appearance. It was composed of 23 parts of gold, and one of phosphorus. He formed the same compound by dropping small pieces of phosphorus into gold in fusion." *Ibid.* p. 90.

8. "**PHOSPHURET OF IRON** may be formed by fusing in a crucible 16 parts of phosphoric glass, 16 parts of iron, and half a part of charcoal powder. It is magnetic, very brittle, and appears white when broken. When exposed to a strong heat, it melts, and the phosphorus is dissipated. It may be formed also by melting equal parts of phosphoric glass and iron filings. Part of the iron combines with the oxygen of the phosphoric glass, and is vitrified; the rest forms the phosphuret, which sinks to the bottom of the crucible. It may be formed also by dropping small bits of phosphorus into iron filings heated red hot. It was first discovered and examined by Bergman, who took it for a new metal, and called it *Siderum*." *Ibid.* p. 127.

9. "**PHOSPHURET OF LEAD** may be formed by mixing together equal parts of filings of lead and phosphoric glass, and then fusing them in a crucible. It may be cut with a knife, but separates into plates when hammered. It is of a silver white colour with a shade of blue, but soon tarnishes when exposed to the air. It may also be formed by dropping phosphorus into melted lead. It is composed of 12 parts of phosphorus, and 88 of lead." *Ibid.* 154.

10. "**PHOSPHURET OF LIME** may be formed by the following process: put into the bottom of a glass tube, close at one end, one part of phosphorus; and holding the tube horizontally, introduce 5 parts of lime in powder, so that they shall be about two inches above the phosphorus. Then place the tube horizontally among burning coals, so that the part of it which contains the lime may be made red hot, while the bottom of the tube containing the phosphorus remains cold. When the lime becomes red hot, raise the tube, and draw it along the coals, till that part of it which contains the phosphorus is exposed to a red heat. The phosphorus is immediately volatilized, and passing through the hot lime, combines with it. During the combination, the mass becomes of a glowing red heat, and a quantity of phosphated

phosphorated hydrogen gas is emitted, which takes fire when it comes into the air. Phosphuret of lime has a deep brown colour, and is moulded into the shape of the tube. It has no smell, and falls to pieces in the air. It is insoluble in water, but it decomposes it. Phosphorated hydrogen gas is emitted, which takes fire as soon as it comes to the surface of the water. If phosphuret of lime, after being kept for some time in water, be taken out and dried, it flames when muriatic acid is poured upon it, owing to the rapid emission of phosphorated hydrogen gas." *Ibid.* p. 432.

11. PHOSPHURET OF MANGANESE. "Phosphorus may be combined with manganese by melting together equal parts of the metal and of phosphoric glass; or by dropping phosphorus upon red hot manganese. The phosphuret is of a white colour, brittle, granulated, disposed to crystallize, not altered by exposure to the air, and more fusible than manganese. When heated, the phosphorus burns, and the metal becomes oxydated." *Ibid.* p. 211.

12. "PHOSPHURET OF NICKEL may be formed either by fusing nickel along with phosphoric glass, or by dropping phosphorus into it while red hot. It is of a white colour, and when broke exhibits the appearance of very slender prisms collected together. When heated, the phosphorus burns, and the metal is oxydated. It is composed of 83 parts of nickel, and 17 of phosphorus." *Ibid.* p. 164.

13. PHOSPHURET OF PLATINUM. "Platinum unites without difficulty to phosphorus. By mixing together an ounce of platinum, an ounce of phosphoric glass, and a drachm of powdered charcoal, and applying a heat of about 32° Wedgwood. M. Pelletier formed a phosphuret of platinum weighing more than an ounce. It was partly in the form of a button, and partly in cubic crystals. It was covered above by a blackish glass. It was of a silver white colour, very brittle, and hard enough to strike fire with steel. When exposed to a fire strong enough to melt it, the phosphorus was disengaged, and burnt on the surface. He found also, that when phosphorus was projected on red hot platinum, the metal instantly fused, and formed a phosphuret. As heat expels the phosphorus, M. Pelletier has proposed this as an easy method of purifying platinum." *Ibid.* p. 95.

14. PHOSPHURET OF SILVER. "Silver was first combined with phosphorus by M. Pelletier. If one ounce of silver, one pound of phosphoric glass, and a drachm of charcoal, be mixed together and heated in a crucible, *Phosphuret of silver* is formed. It is of a white colour, and appears granulated or crystallized. It breaks under the hammer, but may be cut with a knife. It is composed of 4 parts of silver and 1 of phosphorus. Heat decomposes it by separating the phosphorus. Pelletier has observed, that silver in fusion is capable of combining with more phosphorus than solid silver: for when phosphuret of silver is formed by projecting phosphorus into melted silver, after the crucible is taken from the fire, a quantity of phosphorus is emitted the moment the metal cools." *Ibid.* p. 99.

15. "PHOSPHURET OF STRONTIAN may be prepared (says Dr Thomson, p. 456.) by the same process as the phosphuret of barytes;" (see N° 3.) only substituting strontian for barytes.

16. PHOSPHURET OF SULPHUR. "Phosphorus combines readily with sulphur, as Margraf discovered during his experiments on phosphorus. This combination was afterwards examined by M. Pelletier. The two substances are capable of being mixed in different proportions: 72 grains of phosphorus and 9 of sulphur, heated in 4 oz. of water, melted with a gentle heat. The compound remains fluid till it be cooled down to 77°, and then becomes solid: 72 gr. phosphor. 18 sulphur, congeal at 59°: 72 phos. 36 sulph. at 50°: 72 phos. 72 sulphur, at 41°: 72 phos. 216 sulphur at 99°. Phosphorus and sulphur may be combined also by melting them together without water; but the combination takes place so rapidly, that they are not apt to rush out of the vessel, if the heat be exceedingly moderate." *Syst. Chem.* Vol. I. p. 42.

17. "PHOSPHURET OF TIN may be formed by melting in a crucible equal parts of tin and phosphoric glass. Tin has a greater affinity for oxygen than phosphorus has. Part of the metal therefore combines with the oxygen of the glass during the fusion, and flies off in the state of an oxide, and the rest of the tin combines with the phosphorus. The phosphuret of tin may be cut with a knife; it extends under the hammer, but separates in laminae. When newly cut, it has the colour of silver; its filings resemble those of lead. When these are thrown on burning coals, the phosphorus takes fire. this phosphuret may also be formed by dropping phosphorus gradually into melted tin. PELLETIER, to whom we are indebted for our knowledge of all the phosphurets, says, it is composed of 83 parts of tin, and 15 of phosphorus." *ib.* p. 144.

18. "PHOSPHURET OF TITANIUM has been formed by Mr Chevenix: He put a mixture of charcoal, phosphat of titanium, (phosphoric acid combined with oxide of titanium), and a little borax, into a double crucible, well luted, and exposed it to the heat of a forge. A gentle heat was first applied, which was gradually raised for three quarters of an hour, and maintained for half an hour as high as possible. The phosphuret was found in the crucible in the form of a metallic button. It is of a pale white colour, brittle and granular; and does not melt before the blow-pipe." *Ibid.* p. 225.

19. PHOSPHURET OF TUNGSTEN. "Phosphorus is capable of combining with tungsten, but none of the properties of the phosphuret have been ascertained." *ib.* p. 216.

20. PHOSPHURET OF ZINC. "Zinc may be combined with phosphorus, by dropping small bits of phosphorus into it while in a state of fusion. Pelletier added also a little resin, to prevent the oxidation of the zinc. Phosphuret of zinc is of a white colour, and metallic splendour, but resembles lead more than zinc. It is somewhat malleable. When hammered or filed, it emits the odour of phosphorus. When exposed to a strong heat, it burns like zinc." *Ibid.* p. 171.

PHOTINIANS, in ecclesiastical history, a sect of heretics in the 4th century, who denied the divinity of our Lord. They derive their name from PHOTINUS,

PHOTINUS, their founder, who was bishop of Sirmium, and a disciple of Marcellus. Photinus published, in the year 343, his notions respecting the Deity, which were repugnant both to the orthodox and Arian systems. He asserted, that Jesus Christ was born of the Holy Ghost and the Virgin Mary; that a certain divine emanation, which he called the *Word*, descended upon him; and that because of the union of the divine word with his human nature, he was called the Son of God, and even God himself; and that the Holy Ghost was not a person, but merely a celestial virtue proceeding from the Deity. Both parties condemned the bishop in the councils of Antioch and Milan, held in the years 345 and 347. He was condemned also by the council at Sirmium in 351, and was afterwards degraded from the episcopal dignity, and at last died in exile in the year 372 or 375. His opinions were afterwards revived by Socinus.

PHOTINX. See *Music*, § 30.

PHOTIUS, patriarch of Constantinople, was one of the finest geniuses of his time. He was born in Constantinople, and descended of a noble family. His merit raised him to the patriarchate; for Bardas having driven Ignatius from the see, Photius was consecrated by Asbestos in 859. He condemned Ignatius in a synod, whereupon the pope excommunicated him, and he, to balance the account, anathematized the pope. Basilus of Macedon, the emperor whom Photius had reproved for the murder of Michael, expelled him, and restored Ignatius; but afterwards re-established Photius, upon Ignatius's death, in 878. At last, being wrongfully accused of a conspiracy against Leo the philosopher, son and successor to Basilus, he was expelled by him in 886, and died soon after. He wrote a *Bibliotheca*, which contains an examen of 280 authors; also 253 epistles; the *Notomacanon* under 14 titles; an abridgment of the acts of several councils, &c. His natural abilities were very great. There was no branch of art or science in which he was not versed. He was first raised to the chief dignities of the empire, being made principal secretary of state, captain of the guards, and a senator; and in all these stations acquitted himself well. His rise to the patriarchate was very quick; for, being a layman, he was made monk the first day, reader the next, and the following day sub-deacon, deacon, and priest. So that in six days he attained to the highest office in the church. But his unbounded ambition made him commit excesses which rendered him a scourge to those about him. Fabricius calls his *Bibliotheca*, *non liber, sed insignis thesaurus*, "not a book, but an illustrious treasure, in which are contained many curious things no where else to be found. It was brought to light by Andrew Schotus, and communicated by him to David Hoefchelius, who caused it to be printed in 1601. Schottus translated it into Latin, and printed his translation alone in 1606. The Greek text and translation were printed at Geneva in 1611. The last and best edition was printed at Rouen in 1653, folio.

PHOTOMETER. *n. f.* an apparatus for measuring the intensity of light, and the transparency of the medium through which it passes. Instruments for this purpose have been invented by

Count Rumford, M. De Saussure, that eminent mathematician, John Leslie, and others. Mr Leslie's is the simplest instrument of the kind, but it only measures the momentary intensities of light; and a description of all of them would take up too much room. We therefore refer the inquisitive reader to *Nicholson's Philosophical Journal*, vol. 3. M. De Saussure's photometer is also called a *Diaphanometer*. By a number of experiments made with his photometer, Count Rumford found, that by passing through a pane of fine, clear, well polished glass, such as is commonly used for mirrors, light loses 1973 of its whole quantity, *i. e.* of the quantity which impinged on the glass; that when it is made to pass through two panes of such glass standing parallel, but not touching each other, the loss is 3184 of the whole; and that in passing through a very thin, clear, colourless pane of window glass, the loss is only 1263. Hence he infers, that this apparatus might be very useful to the optician to determine the degree of transparency of glass, and direct his choice in the purchase of that important article of his trade. The loss of light, when reflected from the very best plain glass mirror, the count ascertained, by five experiments, to be one-third of the whole that fell upon the mirror.

PHOXUS, a general of the Phocæans, who burnt Lampacus. *Polyæn.* 8.

PHRAATES, or **PHRAHATES**. The name of 4 kings of Parthia. See *PARTHIA*, § 3—5.

PHRAGANDÆ, an ancient people of Thrace. *Livy*, 26. c. 25.

PHRAORTES, the son of Deioces, and the 2d king of the Medes, succeeded his father about A. A. C. 657, and reigned 22 years. He was killed in a fruitless attempt on Nineveh, and was succeeded by his son Cyaxares I.

(1.) * **PHRASE.** *n. f.* [*φρασις*.] 1. An idiom; a mode of speech peculiar to a language. 2. An expression; a mode of speech.—

Now mince the sin,

And mollify damnation with a *phrase*. *Dryden*.—To fear the Lord, and depart from evil, are *phrases* which the Scripture useth to express the sum of religion. *Tillotson*. 3. Stile; expression.—

Thou speak'st

In better *phrase* and matter than thou didst. *Shak*.

(2.) **PHRASE**, in grammar, an elegant turn or manner of speech, peculiarly belonging to this or that occasion, this or that art, or this or that language. Thus we say, an Italian *phrase*, an eastern *phrase*, a poetical *phrase*, a rhetorical *phrase*.

(3.) **PHRASE** is sometimes also used for a short sentence, or small set or circuit of words, constructed together. In this sense, Father Buffier divides phrases into complete and incomplete. Phrases are complete where there is a noun and a verb, each in its proper function; *i. e.* where the noun expresses a subject, and the verb the thing affirmed of it. Incomplete phrases are those where the noun and the verb together only do the office of a noun; consisting of several words without affirming any thing, and which might be expressed in a single word. Thus, *that which is true*, is an incomplete phrase, which might be expressed in one word, *truth*; as, *that which is true satisfies the mind*, *i. e.* *truth satisfies the mind*.

(4.) **PHRASE**,

(4.) PHRASE, in music. (See MUSIC, Part I. *ibop.* IV. § 43.) A phrase in melody is a series of modulations, or in harmony a succession of chords, which form without interruption a sense more or less complete, and which terminate in a epode by a cadence more or less perfect. *Rousséau.*

* To PHRASE. *v. a.* [from the noun.] To file; o call; to term.—

These suns,

For so they *phrase* them, by their heralds challenged

The noble spirits to arms. *Shak. Henry VIII.*

(1.) PHRASEOLOGY. *n. f.* [*phraseo* and *logy*.] Style; diction.—The scholars of Ireland seem not to have the least conception of a file, but run in in a *phraseology*, often mingled with barbarous terms. *Swift's Miscellanies.* 2. A phrase book. *Ainsworth.*

(2.) PHRASEOLOGY is also used for a collection of the phrases or elegant expressions in any language. See PHRASE, § 2.

PHREAS, John, M. D. An English physician, born at London, in the end of the 14th century. He was educated at Oxford and became fellow of Balliol college. He translated from the Greek into Latin *Diodorus Siculus*, and other ancient works. He read lectures on medicine at Ferrara, Florence and Padua, at which last university he was presented with his degree. He died in 1465.

PHREATIS, or } in Grecian antiquity, was a PHREATIUM, } court belonging to the civil government of Athens, situated upon the sea-shore in the Piræus. The name is derived from *αγορεύειν*, because it stood in a pit; or, as others suppose, from the hero *Phreatus*. This court heard such causes as concerned persons who had fled out of their own country for murder, or those that fled for involuntary murder, and who had afterwards committed a deliberate and wilful murder. The first who was tried in this place was Teucer, on a groundless suspicion that he had been accessory to the death of Ajax. The accused was not allowed to come to land, or so much as to cast anchor, but pleaded his cause in his bark; and if found guilty, was committed to the mercy of the winds and waves, or, as some say, suffered there condign punishment; if innocent, he was only cleared of the second fact, and, according to custom, underwent a twelvemonth's banishment for the former. See Poter's *Gr. Antiq.* vol. i. p. 111.

(1.) * PHRENETICK. *PHRENETICK, adj.* [*φρεναιος*; *phrenetique*, Fr.] Mad; inflamed in the brain; rantick.—*Phreneticks* imagine they see that without, which their imagination is affected with within. *Harvey.*—

What æthrum, what *phrenetick* mood,
Makes you thus lavish of your blood? *Hudibras.*
—The world was little better than a common fold of *phreneticks* and bedlams. *Woodward's Nat. Hist.*

(2.) PHRENETICK is used of those who, without being absolutely mad, are subject to such strong sallies of imagination as in some measure pervert their judgment, and cause them to act in a way different from the more rational part of mankind.

(1.) * PHRENITIS. *n. f.* [*φρενιτις*.] Madness; inflammation of the brain.—It is allowed to prevent *phrenitis*. *Wise's Surgery.*

(2.) PHRENITIS is the same with PHRENSY; an

inflammation of the meninges of the brain, attended with an acute fever and delirium. See MEDICINE, *Index*; also an account of a strange degree of phrenzy which attacked Charles VI. of France, under the article FRANCE, § 33.

* PHRENSY. *n. f.* [from *φρενις*; *phreneske*, Fr. whence, by contraction, *phrensy*.] Madness; frantickness. [This is too often written *frenzy*.] See FRENZY.—Many never think of God, but in extremity of fear, and then they think and do as it were but a *phrensy*. *Hooker.*—

Demoniack *phrensy*, moping melancholy. *Milt.*
—Would they only please themselves in the delusion, the *phrensy* were more innocent; but lunatics will needs be kings. *Decay of Piety.*—*Phrensy* or inflammation of the brain, profuse hemorrhages from the nose resolve, and copious bleeding. *Arbutnot on Aliments.*

* PHRENTICK See PHRENETICK.

PHRICIUM, an ancient town near Thermopylæ. *Livy*, 36. c. 13.

PHRIXUS, 1. a river of Argolis: 2. a town of Ellis, built by the Minyæ. *Herod.* iv. c. 148.

PHRONIMA, the daughter of Elearchus, K. of Crete, wife of POLYMNESTUS and mother of Battus, the founder of Cyrene.

PHRURI, an ancient nation of Scythia.

(1.) PHRYGANEÆ, a genus of insects, of which Barbut gives the following characters. "The mouth is without teeth, but furnished with four palpi: the stemmata are three in number: the antennæ are filiform, and longer than the thorax. The wings are incumbent; the under ones are folded." He also informs us, that the genus is divided into two sections; the first of which is characterized, by having two truncated setæ at the extremity of the abdomen, resembling the beard of an ear of corn; while the second has the abdomen simple, or without appendices. The tarsi of the feet of the first family consist of three articulations; those of the second are composed of five. The wings of this section decline from the inner margin towards the sides, so as to resemble the ridge of a house, and are curved, or turn upwards at their extremity. "This insect (says Mr Barbut), before it becomes an inhabitant of the air, has lived under water, lodged in a kind of tube or sheath, the inward texture of which is silk; outwardly covered with sand, straws, bits of wood, shells, &c. When the hexapod worm is about to change to a chrysalis, he stops up the opening of his tube with threads of a loose texture, through which the water makes its way, but prevents the approach of voracious insects. The chrysalis is covered with a thin gauze, through which the new form of the insect is easily discerned. The phryganeæ, on the point of changing its element, rises to the surface of the water, leaves its tube, rises into the air, and enjoys the sweets of the country, flutters upon flowers and trees, but is soon called away to the water-side to deposit its eggs; whence proceeds its posterity. These aquatic larvæ are often found in stagnating waters, where they wrap themselves up in the water-lentil, cut out into regular squares, and fitted one to another. Trouts are very greedy of these larvæ; which is the reason, that in some countries, after stripping them of their coats, they make use of them

them for fishing-baits." There are various different species of the phryganea; but except the *phryganea bicauda* and *striata*, they do not materially differ from one another, except in size and colour.

1. *PHRYGANEA BICAUDA* is of a deep dark-brown colour, having a single yellow longitudinal band running across the head and thorax. The legs are of a brown colour, as are the antennæ; which are also long and filiform. Two brown threads, almost as long as the antennæ, terminate the abdomen; whence the name *bicauda*, or *two-tailed*. The wings, which are about a third longer than the body, are veined with brown fibres, are narrow at the top, broad below, and are as it were stuck upon the body; which they infold, crossing one over the other. This insect, which is met with on the bank of rivers and standing waters, carries its eggs in a cluster at its abdomen, like some spiders.

2. *PHRYGANEA STRIATA* is a large species, of a dun colour except the eyes, which are black, and has a considerable resemblance to the phalæna in the carriage of its wings. The antennæ are as long as the body, and are borne straight forward. The wings are a third larger than the body, having veins of a colour rather deeper than the rest. The feet are large, long, and somewhat finny. Mr Yeats tells us, that the perle of Geoffroy, and phryganeæ of Linnæus, do not differ generically. It appears, however, from Yeats's experiments, that the phryganeæ remain longer in the chrysalis than the perle.

(II.) *PHRYGANEÆ*, THE LESSER, very much resemble the tinæ; but, upon examining them with a glass, the former will be found to be covered with small hairs instead of the scales which adorn the wings of the latter.

PHRYGES, a river of Asia Minor, dividing Phrygia from Caria, and falling into the Hermus. *Pauf.*

PHRYGIA, a country in Asia. From whence it derived its name is not certain; some say it was from the river *Phryx* (now *Sarabat*), which divides Phrygia from Caria, and falls into the Hermus; others from *Phrygia*, the daughter of Asopus and Europa. The Greek writers tell us, that the country took its name from the inhabitants, and these from the town of Brygium in Macedonia, from whence they first passed into Asia, and gave the name of *Phrygia* or *Brygia* to the country where they settled. Bochart is of opinion, that this tract was called Phrygia from the Greek verb *φρυγναι*, to burn or parch; which, according to him, is a translation of its Hebrew name, derived from a verb of the same signification. No less various are the opinions of authors as to the exact boundaries of this country; an uncertainty which gave rise to an observation made by Strabo; viz. that the Phrygians and Mysians had distinct boundaries, but that it was scarce possible to ascertain them. The same writer adds, that the Trojans, Mysians, and Lydians, are, by the poets, all blended under the common name of Phrygians, which Claudian extends to the Pfidians, Bithynians, and Ionians.

1. *PHRYGIA MAJOR*, and indeed all Asia Minor, as lying in the fifth and sixth northern climates,

was, in ancient times, greatly celebrated for its fertility. It abounded in all sorts of grain; being, for the most part, a plain country covered with a deep rich soil, and plentifully watered by small rivers. It was in some parts productive of biumen and other combustible substances. It was well stocked with cattle, having large plains and pasture grounds. The air was anciently deemed most pure and wholesome, though it is now in some parts thought extremely gross, great part of the country lying uncultivated. In Phrygia Major were anciently several cities of great celebrity; such as APAMEA, LAODICEA, HIERAPOLIS, Gordium, &c.—There were also some famous rivers; such as Marfyas, Mæander, &c. The Mæander is now called *Madre* or *Mindre*. See MÆANDER. The Phrygians accounted themselves the most ancient people in the world. Their origin, however, is extremely dark and uncertain. Josephus and St Jerome say they were descended from Togarmah, one of Gomer's sons; and that they were known to the Hebrews under the name of *TIGRAMMANES*. The Heathen authors derive them from the Brygians, a people of Macedonia. But this is a conjecture totally unsupported, except by the similarity of names. Bochart thinks that the Phrygians were the offspring of Gomer, the eldest son of Japhet; the word Phrygia being the Greek translation of his name. Josephus makes Gomer the father of the Galatians; but he, by the Galatians, must necessarily mean the Phrygians inhabiting that part of Phrygia which the Galatians had made themselves masters of; the descendants of Gomer being placed by Ezekiel northward of Judæa, near Togarmah (which Bochart takes to be Cappadocia), long before the Gauls passed over into Asia. The ancient Phrygians are described as superstitious, voluptuous, and effeminate, without any prudence or forecast, and of such a servile temper, that nothing but stripes and ill usage could make them comply with their duty; which gave rise to several trite and well known proverbs. They are said to have been the first inventors of divination by the singing, flying, and feeding of birds. Their music, commonly called the *Phrygian mood*, is alleged by some as an argument of their effeminacy. Their government was monarchical; and all Phrygia was, during the reigns of some kings, subject to one prince. Ninnacus, Midas, Manis, Gordius, and his descendants, were undoubtedly sovereigns of all Phrygia. But, some time before the Trojan war, this country was divided into several petty kingdoms, and we read of divers princes reigning at the same time. Apollodorus mentions a king of Phrygia contemporary with Ilus, king of Troy. Cedrenus and others speak of one Teuthras, king of a small country in Phrygia, whose territories were ravaged by Ajax, himself slain in single combat, his royal seat laid in ashes, and his daughter, Tecmessa, carried away captive by the conqueror. Homer mentions Phorcyas and Afcanius, both princes and leaders of the Phrygian auxiliaries that came to the relief of Troy. Tantalus was king of Sipylus only, and its district; a prince no less famous for his great wealth, than infamous for his covetousness and other detestable vices. That Phrygia was subdued either by Ninus.

as Diodorus Siculus informs us, or by the Amazons, as we read in Suidas, is not sufficiently warranted. Most authors who mention Gordius, tell us, that the Phrygians having sent to consult an oracle, to know how they might put an end to the intestine broils which rent their country into many factions and parties, received for answer, that the most effectual means to deliver themselves and their country from the calamities they groaned under, was to commit the government to a king. This advice they followed, and placed Gordius on the throne. See GORDIUS, N^o I. As to their commerce, all we know is, that Apamea was the chief emporium of all Asia Minor.—Thither resorted merchants and traders from all parts of Greece, Italy, and the neighbouring islands. Syncellus says that the Phrygians were for some time masters of the sea; and none but trading nations ever prevailed on that element. The country produced many choice and useful commodities, which afforded considerable exports. They had a safe coast, and convenient harbours. The Phrygian idols were very numerous. The chief of these was Cybele, who went by a variety of names. (See CYBELE.) They also worshipped Bacchus under the name of *Sabazios*; and his priests they called *Sabbi*. The history of their kings is uncertain, and the dates of their several reigns and actions cannot now be fixed; we shall refer such of our readers, therefore, as wish to know what is certain respecting them, to the Ancient Universal History, already quoted more than once in the present article. See also GORDIUS, MIDAS, &c.

II. PHRYGIA MINOR. See TROY.

III. PHRYGIA PROPER, according to Ptolemy, was bounded on the N. by Pontus and Bithynia; on the W. by Mysia, Troas, the Ægean Sea, Lydia, Mæonia, and Caria; on the S. by Lycia; on the E. by Pamphilia and Galatia. It lies between 37° and 41° Lat. N. extending in Lon. from 37° to 52°. The inhabitants of this country, mentioned by Ptolemy, are the Lycaones and Anthemisenii, towards Lycia; and Moccadelis or Moccadine, the Cydeses or Cydites towards Bithynia; and between these the Peltini or Speltini, the Moxiani, Phylacenses, and Hierapolitæ. To these we may add the Bercyntes mentioned by Strabo. Phrygia is commonly divided into the Greater and Lesser Phrygia, called also TROAS. But this division did not take place till Troas was subdued by the Phrygians; and hence it is more considered by some Roman writers as a part of Phrygia, than Bithynia, Cappadocia, or any other of the adjacent provinces. In after ages, the Greater Phrygia was divided into two districts or governments, called,

1. PHRYGIA PACATIANA, from Pacatianus, who, under Constantine, bore the great office of the prefectus prætorio of the East; and

2. PHRYGIA SALUTARIS, from some miraculous cures supposed to have been performed there by the archangel Michael.

(1.) PHRYGIAN. *adj.* Of or belonging to PHRYGIA.

(2.) PHRYGIAN STONE, in natural history, is the name of a stone described by the ancients, and used by them in dyeing; perhaps from some vitriolic or aluminous salt contained in it, which

served to enliven or fix the colours used by the dyers. It was light and spongy, resembling a pumice; and the whitest and lightest were reckoned the best. Pliny gives an account of the method of preparing it for the purpose of dyeing, which was by moistening it with urine, and then heating it red hot, and suffering it to cool.—This calcination was repeated three times, and the stone was then fit for use. Dioscorides recommends it in medicine after burning; he says it was drying and astringent.

(1.) PHRYGIANS, the ancient inhabitants of Phrygia. See PHRYGIA.

(2.) PHRYGIANS, a Christian sect. See CATHARISTIANS and MONTANISTS.

PHRYMA, in botany, a genus of the gymnospermia order, belonging to the didynamia class of plants, and, in the natural method, ranking in the 60th order, *Perfonata*.

(1.) PHRYNE, a famous prostitute, who flourished at Athens about A. A. C. 328. She was mistress of Praxiteles, who drew her picture, which was one of his best pieces, and was placed in the temple of Apollo at Delphi. We are told that Apelles painted his Venus Anadyomene after he had seen Phryne on the sea-shore naked, and with dishevelled hair. Phryne became so very rich by the liberality of her lovers, that she offered to rebuild Thebes at her own expence, which Alexander had destroyed, provided this inscription was placed on the walls, *Alexander diruit, sed meretrix Phryne refecit*; which was refused. See *Plin.* 34. c. 8.

(2.) PHRYNE, a woman who was accused of impiety. When she found that she was going to be condemned, she unveiled her bosom, which so influenced her judges, that she was immediately acquitted.

PHRINICUS: 1. A general of Samos, who endeavoured to betray his country: 2. A flatterer at Athens: 3. A tragic poet of Athens, disciple to Theſpis. He was the first who introduced a female character on the stage.

PHRYNIS: 1. A musician of Mitylene. He was the first who obtained a musical prize at the Panathenæa at Athens. He added two strings to the lyre, which had always been used with seven by all his predecessors. He flourished about A. A. C. 438. He was originally a cook at the house of Hiero king of Sicily: 2. A writer in the reign of Commodus, who made a collection, in 36 books, of phrases and sentences from the best Greek authors, &c.

PHRYNO, a celebrated general of Athens, who flourished about A. A. C. 590.

(1.) PHRYXUS, in fabulous history, a son of Athamus, king of Thebes, by Nephele. When his mother was repudiated, he was persecuted with the most inveterate fury by his step-mother Ino, because he was to sit on the throne of Athamas, in preference to her children. His mother apprized him of Ino's intentions upon his life; or, according to others, his preceptor; and the better to make his escape, he secured part of his father's treasures, and privately left Boeotia with his sister Helle, to go to their relation Æetes, king of Colchis. They embarked on board a ship, or, as we are informed by the poets and mythologists,

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they mounted on the back of a ram, whose fleece was of gold, and proceeded on their journey through the air. The height to which they were carried made Helle giddy, and she fell into the sea. Phryxus gave his sister a decent burial on the seashore, and after he had called the place **HELLESPONT** from her name, he continued his flight, and arrived safe in the kingdom of **Æetes**, where he offered the ram on the altar of **Mars**. The king received him kindly, and gave him **Chalciopé** his daughter in marriage. She had by him **Phrontis**, **Melas**, **Argos**, and **Cylindrus**, whom some call **Cyturus**. He was afterwards murdered by his father-in-law, who envied him the possession of the golden fleece; and **Chalciopé**, to prevent her children from sharing their father's fate, sent them privately from **Colchis** to **Bœotia**, as **Ino** was then dead. The fable of the flight of **Phryxus** to **Colchis** on a ram has been explained by some, that the ship on which he embarked was either called by that name, or carried on her prow a figure of that animal. The fleece of gold is accounted for by observing, that **Phryxus** carried away immense treasures from **Thebes**. **Phryxus** was placed among the constellations of heaven after death. The ram which carried him to **Asia** is said to have been the fruit of **Neptune's** amour with **Theophane** the daughter of **Atlas**. This ram the gods had given to **Athamas** to reward his piety and religious life: and **Nephelè** procured it for her children, just as they were going to be sacrificed to the jealousy of **Ino**. **Phryxus's** murder was some time after amply revenged by the Greeks; it having occasioned the famous expedition achieved under **Jafon** and many of the princes of Greece, which had for its object the recovery of the golden fleece, and the punishment of the king of **Colchis** for his cruelty to the son of **Athamas**.

(2, 3.) **PHRYXUS**, a town and river. See **PHRIXUS**.

PHTEMPHUTL. } See **PHUT**.
PHTENOTES. }

PHTHIA, an ancient town of **Thessaly**, in **Phthiotis**, east of **Mount Othrys**, famous for being the birth-place of **ACHILLES**, hence called *Phtia Leros*.

PHTHIOTIS, in ancient geography, a province of **Thessaly**, between the **Sinus Pelagicus** and **Sinus Maliacus**, **Magnesia**, and **Mount Oeta**; also called **Achaia**. *Plin.* x. c. 2.

PHTHIRIASIS, the LOUSY EVIL [from *phug*, a louse.] It is a lousy distemper; children are frequently its subjects, and adults are sometimes troubled with it. The increase of lice, in a warm moist situation, is very great; but a cold and dry one soon destroys them. On the human body four kinds of lice are distinguished: 1. The *pediculi*, so called because they are more troublesome with their feet than by their bite. These are in the heads of children, especially if sore or scabby; and often in those of adults, if they are slothful and nasty. (See **PEDICULUS**.) 2. Crab-lice, see **CRAB-LICE**. 3. Body lice; these infest the body, and breed in the clothes of the nasty and slothful. 4. A sort which breed under the cuticle, and are found in the hands and feet; they are of a round form, and so minute as often to escape the sight; by creeping under the scarf skin they cause an

intolerable itching; and when the skin bursts where they lodge, clusters of them are found there. See **ACARUS**. A good diet and cleanliness conduce much to the destruction of lice. When they are in the head, comb it every day; and after each combing, sprinkle the pulv. scm. *staph. agr.* or *coccul. Ind.* among the hairs every night, and confine it with a tight cap. *Cedrochins*, in his treatise on lice, says, that the powdered coc. *Ind.* exceeds all other remedies; and that it may be mixed in the pulp of apple, or in lard, and applied every night to the hair. Some assert, that if the pulv. cort. rad. *fassiastr.* is sprinkled on the hair, and confined with a handkerchief, it destroys the lice in one night. The body-lice are destroyed by any bitter, sour, salt, or mercurial medicine, if applied to the skin. The black soap, and the flowers called *cardamine* or *lady's smock*, are said to be specifics in all cases of lice on the human body.

PHTHIROPHAGES. See **PENICULUS**.

* **PHTHISICAL.** *adj.* [*phthisis*, *phthisique*, Fr. from *phthisick*.] Wasting.—Collection of purulent matter in the capacity of the breast, if not suddenly cured, doth undoubtedly impel the patient into a *phthisical* consumption. *Harvey*.

* **PHTHISICK.** *n. f.* [*phthisis*; *phthisic*, Fr.] A consumption.—His disease was a *phthisick* or asthma. *Harvey*.

(1.) * **PHTHISIS.** *n. f.* [*phthisis*.] A consumption.—If the lungs be wounded deep, though they escape the first nine days, yet they terminate in a *phthisis* or fistula. *Wifeman*.

(2.) **PHTHISIS** is a species of consumption, occasioned by an ulcer in the lungs. See **MEDICINE**, *Index*. Dr **Beddoes** has suggested a new theory of *phthisis*, founded on the prevailing pneumatic doctrine in chemistry. He fixes on the effect of pregnancy in suspending the progress of *phthisis*, as a fact which, by its mode of operation, might suggest a method of diminishing the havoc occasioned by this distemper. "The fœtus (says he), has its blood oxygenated by the blood of the mother through the placenta. During pregnancy there seems to be no provision for the reception of an unusual quantity of oxygen. On the contrary, in consequence of the impeded action of the diaphragm, less and less should be continually taken in by the lungs. If, therefore, a somewhat diminished proportion of oxygen be the effect of pregnancy, may not this be the way in which it arrests the progress of *phthisis*? and if so, is there not an excess of oxygen in the system of consumptive persons? and may we not, by pursuing this idea, discover a cure for this fatal disorder?" Dr **Beddoes** thinks, that this supposition is countenanced by the deficiency of oxygen in the blood of pregnant women, of asthmatic patients, and of those who labour under sea-scurvy; and by the superabundance of it in the blood of *phthisical* persons, indicated by its colour, as well as by the aggravation of the symptoms of consumption by breathing oxygen air, and by the relief from inspiring atmospheric air mixed with carbonic acid air; and, lastly, from the small proportion of deaths among sea-faring people. Supposing acids to act by decomposition, their alleged effects in producing consumption are consistent with the author's doctrine,

loStrove, as well as the emaciation preceding and accompanying phthisis. From these facts, Dr Beclides concludes, that "1. The phthical inflammation may so alter the structure of the lungs, as to cause them to transmit a more than ordinary portion of oxygen to the blood; or, 2. Some unknown cause having enabled them to transmit, or the blood itself to attract, more oxygen, an inflammation of the lungs might ensue." Our author in a letter to Dr Erasmus Darwin, gives an account of his treating with success several cases of phthisis according to the principles of this theory. After distinguishing consumptions into two kinds, the *florid* and the *pituitous* or *catarrhal*, he observes, "that the system may be as variously affected by means of the lungs as of the stomach: that it is impossible to doubt, that we are nourished by the lungs as truly as by the stomach; and that what we take in at the former entrance, becomes, like our food, a part of the substance of our solids as well as of our fluids. By the lungs we can also introduce effectual alteratives of the blood, and by consequence of all the parts nourished by the blood." He then acquaints us more particularly with the apparatus requisite for the practice proposed. 1st, It should be able to furnish azotic, hydrogen, carbonic, and oxygen airs: our author having, as he says, "no intention to confine himself to one incurable disorder. 2dly, The reservoirs should be large, that the patients may be supplied with any quantity that their symptoms may require: and, 3dly, It is necessary to be able to mix these airs with one another, as well as with atmospheric air, in any proportion." These objects, we are told, have been completely attained by a construction not very unlike to that employed in the gazometers of M. Lavoisier, and Dr Van Marum.

PHUL, or PUL, king of Assyria, is by some historians said to be Ninus under another name and the first founder of that monarchy: A renowned warrior. He invaded Israel in the reign of Mehamem, who became tributary to him, and paid him 1000 talents of silver for a peace: A. A. C. 771.

PHUT, or PUTH, the 3d son of Ham. (Gen. x. 6.) Calmet is of opinion, that Phut peopled either the canton of PHTEMPHU, *Phitemputi*, or *Phitembuti*, set down in Pliny and Ptolemy, whose capital was Tharia in Lower Egypt, inclining towards Lybia; or the canton called PHENOTAS, of which Butus was the capital. The prophets often speak of Phut. In the time of Jeremiah, Phut was under the obedience of Necho king of Egypt. Nahum (iii. 9.) reckons up his people in the number of those who ought to have come to the assistance of No-ammon or Diospolis. See NUMIDIA, § 3.

PHYA. See ATTICA, § 9.

PHYCUS, (*untis*), a promontory near Cyrene, now called RAS EL SEM. *Lucan*. 9.

(1.) PHYLAS, an ancient town of Thessaly, built by Phylacus. Protesilaus reigned in it, hence called *Phylacides*. *Lucan*. vi. 252.

(2, 3.) PHYLACE, 1. a town of Arcadia; *Paus.* viii. 54. 2. A town of Epirus, *Liv.* 45, c. 26.

(1.) *PHYLACTERY. *n. f.* [*φύλακτος*; *phylaktos*, Fr.] A bandage on which was inscribed

some memorable sentence.—The *phylacteries* on their wrists and foreheads were looked on as spells. *Hammond*.—

Golden sayings,

On large *phylacteries* expressive writ;
Were to the foreheads of the Rabbins ty'd.

Prior.

(2.) PHYLACTERY, in general, was a name given by the ancients to all kinds of charms, spells, or characters, which they wore about them, as amulets, to preserve them from dangers or diseases.

(3.) PHYLACTERY also denoted a slip of parchment, whereon was written some text of Holy Scripture, particularly of the decalogue, which the devout people among the Jews wore on the forehead, the breast, or the neck, as a mark of their religion. The primitive Christians also gave the name *phylacteries* to the cases wherein they inclosed the relics of their dead. Phylacteries are often mentioned in the New Testament, and appear to have been very common among the Pharisees in our Lord's time.

PHYLACUS, the son of Deion, K. of Phocis, and founder of PHYLACE in Thessaly. He married Clymene, the daughter of Mynias, by whom he had Iphiclus, the father of PROTESILAUS.

PHYLARCHUS, an ancient Grecian biographer, who flourished A. A. C. 220.

PHYLE, a well fortified village of Attica, near Athens. *Cor. Nep*.

PHYLEUS. See PHILEUS.

PHYLICA, BASTARD ALATERNUS; a genus of the monogynia order, belonging to the pentandria class of plants; and in the natural method ranking under the 43d order, *Dumose*. There are 6 species, of which three are kept in the gardens of this country; but, by reason of their being natives of warm climates, they require to be kept in pots, and housed in winter. They are all shrubby plants, rising from three to five feet high, and adorned with beautiful clusters of white flowers. They are propagated by cuttings.

PHYLACHNE, in botany, a genus of the monandria order, belonging to the monœcia class of plants.

PHYLLALIA; 1. a district of Arcadia: 2. a town of Thessaly.

PHYLLANTHUS, in botany, SEA-SIDE LAUREL; a genus of the triandria order, belonging to the monœcia class of plants; and in the natural method ranking in the 38th order, *Tricoctæ*. There are six species, all natives of warm climates; and rise from 12 to 14 feet to the height of middling trees. They are tender and cannot be propagated in this country without artificial heat.

PHYLLIUS, a mountain, and country, of Macedonia. *Apol. Arg*.

(1.) PHYLLIS, in fabulous history, a daughter of Sithon, or, according to others, of Lyeurgus king of Thrace, who received Demophaon the son of Theseus; who, at his return from the Trojan war, had stopped on her coasts. She became enamoured of him, and did not find him insensible to her passion. After some months of mutual tenderness and affection, Demophaon set sail for Athens, where his domestic affairs recalled him. He promised faithfully to return within a month; but either his dislike for Phyllis, or the irreparable

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ble situation of his affairs, obliged him to violate his engagement; and the queen, grown desperate on account of his absence, hanged herself, or, according to others, threw herself down a precipice into the sea and perished. Her friends raised a tomb over her body, where there grew up certain trees, whose leaves, at a particular season of the year, suddenly became wet, as if shedding tears for the death of Phyllis. According to an old tradition mentioned by Servius, Virgil's commentator, Phyllis was changed by the gods into an almond tree, which is called *phylla* by the Greeks. Some days after this metamorphosis, Demophoon revisited Thrace; and when he heard of the fate of Phyllis, he ran and clasped the tree, which, though at that time stripped of its leaves, suddenly shot forth, and blossomed, as if still sensible of tenderness and love. The absence of Demophoon from the house of Phyllis has given rise to a beautiful epistle of Ovid, supposed to have been written from the Thracian queen about the 4th month after her lover's departure.

(2.) **PHYLLIS**, in botany, **BASTARD HARE'S EAR**, a genus of the digynia order, belonging to the pentandria class of plants; and in the natural method ranking under the 47th order, *Stellatae*.

(3.) **PHYLLIS**, in geography, a country of Thrace, near mount Pangæus.

PHYLOS; 1. a country of Arcadia; 2. a town of Thessaly, where Apollo had a temple.

PHYMOSIS. See **MEDICINE**, *Index*.

PHYSALIS, the **WINTER CHERRY**; a genus of the monogynia order, belonging to the pentandria class of plants; and in the natural method ranking under the 28th order, *Lurida*. There are 16 species; of which the most remarkable is the

PHYSALIS ALKEKENGII, or common winter-cherry. This grows naturally in Spain and Italy. The roots are perennial, and creep in the ground to a great distance if they are not confined. These, in the spring, shoot up many stalks, which rise to the height of a foot or more, garnished with leaves of various sorts; some of which are angular and obtuse, some oblong and sharp pointed, with long foot-stalks. The flowers are produced from the wings, standing upon slender foot-stalks; are of a white colour, and have but one petal. They are succeeded by round berries about the size of small cherries, inclosed in an inflated bladder, which turns red in autumn, when the top opens and discloses the red berry, which is soft, pulpy, and filled with flat kidney-shaped seeds. Soon after the fruit is ripe, the stalks decay to the root. The plant is easily propagated, either by seeds or parting the roots.

PHYSALUS. See **SCOLOPENDRA**.

PHYSELLA, a town of Macedonia. *Mela*.

PHYSCION, a cape or rock of Bœotia, famous for being the residence of the **SPHYNX**.

PHYSCON, [φύσκων, i. e. *Big-bellied*,] a nickname of a tyrant of Egypt. See **EGYPT**, § 13, 14.

PHYSCOS, a town of Caria, opposite Rhodes. *Strabo*, 14.

PHYSCUS, a river of Asia, running into the Tigris. Xenophon crossed it with his 10,000 Greeks, in their famous retreat from Cunaxa.

PHYSETER, the **SPERMACEI FISH**, in zoology, a genus of mammalia, belonging to the or-

der of *cetæ*. There are four species, according to Mr Kerr:

1. **PHYSETER CATODON**, the round headed cachalot, with a fistula in the snout, and having no back fin. Of this species, 102 of different sizes were cast ashore at one time on one of the Orkney Isles, the largest 24 feet in length. The head is round, the opening of the mouth small. Sibbald says it has no spout-hole, but only nostrils: But Mr Pennant is of opinion, that the former being placed at the extremity of the nose, has been mistaken by him for the latter. Some teeth of this species are an inch and a quarter long, and in the largest part of the thickness of one's thumb. The top is quite flat, and marked with concentric lines; the bottom is more slender than the top, and pierced with a small orifice: instead of a back fin, there was a rough space. For the method of extracting the spermaceti from the brain of these creatures, see **SPERMACEI**.

2. **PHYSETER MACROCEPHALUS**, the *blunt-nosed cachalot*, the *blunt headed cachalot* of Pennant, or *spermaceti cubale* of Dudley, has no fin on the back; and the blowing pipe is situated on the nape of the neck. Of this species Mr Kerr enumerates 3 varieties: viz.

i. **PHYSETER MACR. ALBICANS**, the *white blunt-nosed cachalot*, of a white colour with a smooth back. This is about 15 or 16 feet long; and resembles the common whale.

ii. **PHYSETER MACR. CICKEREUS**, the *grey blunt-nosed cachalot*; of a blackish ash colour, with a hump on the back. This variety grows to 60 and even 70 feet long, by 30 or 40 in circumference; has a very large head, with very small eyes; the lower jaw is much narrower than the upper, and is furnished with a considerable number of teeth, which are received into sockets of the upper jaw when the mouth is shut. It has a hump on the back, about a foot above the general surface. It is found in Davis's Straits.

iii. **PHYSETER MACR. NIGER**, is black coloured, and has a hump on the back 12 inches high. This variety is found in the European seas; it grows to about 60 feet long and 36 in circumference: the head is exceedingly thick, and the lower jaw, which is smaller than the upper, has 46 teeth in 2 rows, which rise 2½ inches above the gums, and are received into sockets in the upper jaw. The female teats are retractile. The substance improperly named **SPERMACEI** is procured from this species; and the *spermaceti*, or *white oil* is extracted from it. It is found in the S. coasts of Brazil, Patagonia, and the Pacific Ocean. Dr Schwedliar says that **AMBERGREASE** is ejected from this animal. It feeds on the *Sepia Odopodia*.

3. **PHYSETER MICROPS**, the *black-headed cachalot*, with a long fin on the back, and the upper jaw considerably longer than the under one. A fish of this kind was cast ashore on Cramond Isle, near Edinburgh, December 22, 1769; its length was 54 feet; the greatest circumference, which was just beyond the eyes, 30: the upper jaw was 15 feet; the lower 10. The head was of a most enormous size, very thick, and above one 3d the size of the fish: the end of the upper jaw was quite blunt, and near 9 feet high; the spout-hole

was placed near the end of it. The teeth were placed in the lower jaw, 23 on each side, all pointing outwards; in the upper jaw, opposite to them, were an equal number of cavities, in which the ends of the teeth lodged when the mouth was closed. One of the teeth measured 8 inches long, the greatest circumference the same. It was hollow within-side for the depth of three inches, and the mouth of the cavity very wide; it was thickest at the bottom, and very small at the point, bending very much; but in some the flexure is more than in others. These, as well as the teeth of all other whales, are very hard, and cut like ivory. The eyes are very small, and remote from the nose. The pectoral fins were placed near the corners of the mouth, and were only 3 feet long; it had no other fin, only a large protuberance on the middle of the back. The tail was a little forked, and 14 feet from tip to tip. The penis 7½ feet long. Linnæus informs us, that this species pursues and terrifies the porpoises to such a degree as often to drive them on shore.

4. **PHYSETER TURSIDO**, the *high-finned cachalot*, has a very long fin on the back, and the ends of the teeth are flat. It inhabits the Northern ocean, and grows sometimes to 100 feet long; the back fin is very long, sharp-pointed, and erect, like a ship's mast, and the blowing pipe is placed flat on the forehead: the teeth are slightly bent and have their ends flattened.

PHYSIC, or **PHYSICK**, *n. f.* the art of healing; properly called **MEDICINE**. The word is formed from the Greek *physis*, nature; in regard medicine consists principally in the observation of nature. See **MEDICINE**, **PHYSICK**, and **PHYSICS**.

(1.) * **PHYSICAL**, *adj.* [*physique*, Fr. from *physikê*] 1. Relating to nature or to natural philosophy; not moral.—The *physical* notion of necessity, that without which the work cannot possibly be done. *Hamm.*—I call that *physical* certainty, which doth depend upon the evidence of sense. *Wilkins.*—To reflect on those innumerable secrets of nature and *physical* philosophy, which Homer wrought in his allegories, what a new scene of wonder may this afford us! *Pope.*—Charity, in its origin, is a *physical* and necessary consequence of the principle of reunion. *Cheyne's Philos. Princ.* 2. Pertaining to the science of healing: as, a *physical* treatise, *physical* herbs. 3. Medicinal; helpful to health.—

Is Brutus sick? and is it *physical*
To walk unbraced? *Shak. Jul. Cesar.*

The blood I drop is rather *physical*
Than dangerous to me. *Shak. Coriol.*

4. Resembling *physick*: as, a *physical* taste.

(2.) **PHYSICAL**, something belonging to, or really existing in nature. In this sense, we say a *physical* point in opposition to a mathematical one, which only exists in the imagination; a *physical* substance or body, in opposition to spirit, or metaphysical substance, &c.

* **PHYSICALLY**, *adv.* (from *physical*.) 1. According to nature; by natural operation; in the

way or sense of natural philosophy; not morally.—Time, measuring out their motion, informs us of the periods and terms of their duration, rather than effecteth, or *physically* produceth the same. *Brown's Vulg. Err.*—The outward act of worship may be considered *physically* and abstractly from any law. *Stillington.*—The act of the will commanding, and the act of any other faculty executing that which is so commanded, be *physically* and in the precise nature of things distinct. *South.*—I am not now treating *physically* of light or colours. *Locke.* 2. According to the science of medicine; according to the rules of medicine.—He that lives *physically*, must live miserably. *Cheyne.*

* **PHYSICIAN**, *n. f.* [*physicien*, Fr. from *physick*]. One who professes the art of healing.—

Trust not the *physician*,

His antidotes are poison. *Timon of Athens.*
—Some *physicians* are so conformable to the humour of the patient, as they press not the true cure of the disease. *Bacon.*—His gratulatory verse to king Henry is not more witty than the epigram upon the name of Nicolas, an ignorant *physician*, who had been the death of thousands. *Peacbam.*

Taught by thy art divine, the sage *physician*
Eludes the urn; and chains orexides death. *Prior.*

(2.) **PHYSICIANS, COLLEGES OF**. See **COLLEGE**, No 6 and 7.

* **PHYSICK**, *n. f.* [*physikê*, which, originally signifying natural philosophy, has been transferred in many modern languages to medicine.] 1. The science of healing.—Were it my business to understand *physick*, would not the safer way be to consult nature herself in the history of disease? *Locke.* 2. Medicines; remedies.—In itself we desire health, *physick* only for health's sake. *Hooker.*—Use *physick* or ever thou be sick. *Eccles. xviii. 19.*—Prayer is the best *physick* for many melancholy diseases.

He 'scapes the best, who, nature to repair,
Draws *physick* from the fields. *Dryden.*
—As all seasons are not proper for *physick*, so all times are not fit for purging the body politick. *Davenant.* 5. [In common phrase.] A purge.—The people use *physick* to purge themselves of humours. *Abbot's Description of the World.*

* To **PHYSICK**, *v. a.* [from the noun.] To purge; to treat with *physick*; to cure.—

The labour we delight in *physicks* pain. *Shak.*
—It is a gallant child; one that indeed *physicks* the subject. *Shak. Wint. Tale.*

That will *physick* the great myrmidon. *Shak.*
—We love to be instructed, as well as *physicked* with pleasure. *L'Estrange.*

PHYSICO-MATHEMATICS, a science, which includes those branches of *physic*, which, uniting observation and experiment to mathematical calculation, undertake to explain the phenomena of nature.

* **PHYSICO-THEOLOGY**, *n. f.* [from *physic* and *theology*.] Divinity enforced or illustrated by natural philosophy.

DEFINITIONS and OBJECTS OF PHYSICS.

PHYSICS, [Gr. φυσικα, from φυσικ, NATURE,] in its most enlarged sense, comprehends the investigation of every object in nature; and NATURAL PHILOSOPHY is a term of the same extent: but ordinary language, particularly among British naturalists, employs both those terms in a much narrower sense, which it is proper here to define. Under the article PHILOSOPHY, we gave an account of that view of nature in which the objects of our attention are considered as connected by causation; and endeavoured to point out the manner in which this study may be most advantageously cultivated. The objects of the contemplation, both of the philosopher and the naturalist, (if these characters can be supposed distinct) are the whole UNIVERSE: which consists, not of a number of independent existences, detached from each other, but of a number of substances connected by various relations and dependencies, so as to form a WHOLE, which is generally styled the SYSTEM OF NATURE.

This consideration of the individual objects which compose the universe in *one system* is the result of sober contemplation. The natural historian attempts in vain to describe objects, by only informing us of their shape, colour, and other sensible qualities. In describing a piece of marble, for instance, he tells us that it takes a fine polish; that it strikes fire with steel: that it burns to quicklime; that it dissolves in aquafortis, and is precipitated by alkalis, &c. and thus it appears that even the *description* of any thing, with the view of ascertaining its specific nature, and with the sole purpose of discrimination, cannot be accomplished without taking notice of its various relations to other things. But after all this description, we are still ignorant of its *nature*; of its *essence*, or what makes it that thing, and no other thing. We must content ourselves with the discovery of its *qualities* or *properties*; and it is the assemblage of these which we call its *nature*. But this is inaccurate. These do not constitute its essence, but are the consequences of it. Yet this is all we can know of its nature. The term *property* is nothing but a name expressing some relation which the substance under consideration has to other things. This is true of all such terms. *Gravity, elasticity, sensibility, gratitude*, and the like, express nothing but certain *matters of fact*, which may be observed respecting the object of our contemplation in different circumstances of situation with regard to other things. Our notions of individuals, therefore, as distinct from each other imply their relations to other things.

SECT. I. Of the GENERAL CONNECTION of ALL PARTS of the UNIVERSE.

THE most superficial view of the universe shows an evident connection between all its parts. All things on this globe are connected with each other by the laws of motion and of mind. Our globe is connected with the whole of the solar system by gravitation. If we extend our observations to the fixed stars, the connection by no means fails. Their inconceivable distance, indeed, renders it impossible for us to acquire any

extensive knowledge of their nature. But they are evidently connected with the solar system by the identity of the light which they emit with that emitted by our sun, or any shining body. It moves with the same velocity, it consists (in most of them) of the same colours, and it is reflected, refracted, and inflected, according to the same optical laws.

In this great and unbounded scene of contemplation, our attention is naturally directed to the different classes of objects in proportion to the interest we take in them. There is nothing in which we are so much interested as our fellow men; and therefore we study their *distinctive* nature by attending to their *characteristic* appearances. We observe them continually producing, like ourselves, certain changes in the situation or condition of surrounding objects; and these changes are evidently directed to certain ends *which respect themselves*. Observing this subserviency of the effects which they produce to their own accommodation, we consider this adjustment of means to ends, as the effect of INTENTION, as we experience it to be in our own case, where we are conscious of this intention, and of these its effects. We therefore interpret those actions of other men, where we observe this adjustment of means to ends, as marks or signs of intention in them similar to our own. And thus a quality, power, or faculty, is *supposed* to exist in them from its *sign*, although the quality itself is not *immediately* cognizable by our senses.

As this intention in ourselves is accompanied by perception of external objects, knowledge of their properties, desire of good, aversion from evil, volition, and exertion, without all which, we neither could nor would perform the actions which we daily perform, we *suppose* the same perception, knowledge, desire, aversion, volition, and exertion in them. Thus, by the constitution of our minds, we consider the employment of *means*, by which ends terminating in the agent, are gained, as the natural signs of design or intention. And, therefore, or the employment of means, is the natural sign of intention; and wherever we observe this adjustment of means to ends, we infer the agency of design.

A very superficial acquaintance with the objects around us, leads us to extend this inference to a great number of beings besides our fellow men; namely, to the whole animal creation: for in all we observe the same subserviency to the ends of the agent, in the changes which we find them continually producing in the objects around them. These changes are all adjusted to their own well-being. In all such cases, therefore, we are forced, by the constitution of our minds, to infer the existence of design or intention in these beings also. But in numberless changes produced by external objects on each other, we observe no such fitness in the effects, no such subserviency to the well-being of the agent. In such cases, therefore, we make no such inference of thought or design.

SECT. II. Of the GENERAL DIVISION of EXTERNAL OBJECTS.

THE general view of things, above taken notice of, leads us to make an important distinction, by which we arrange all external objects into two *classes*

classes. The first resembles ourselves, in giving external marks of that *thought* or *intention* of which we are conscious; and we *suppose* in them the other properties which we discover in ourselves, viz. thought, perception, memory, foresight, and all that collection of faculties which we feel in ourselves, and which constitute the animal. The other class of objects exhibit no such appearances, and we make no such inference. Thus we divide the whole objects of external nature into the classes of *THINKING* and *UNTHINKING* beings.

Our first judgments about these classes, however, must be very inaccurate. But when an animal dies, we observe that it no longer gives the former marks of thought and intention, and that it now resembles the class of unthinking beings, although it still retains all that fitness of organical structure which it had before. This leads us to conclude, that the distinction does not arise from a difference in organical structure, but from a distinct substance common to all thinking beings, but separable from their organical frame. To this substance we ascribe thought, intention, contrivance, and all that collection of faculties which we feel in ourselves. To this substance in ourselves, we refer all sensations, pleasures, pains, remembrances, desires, purposes; and to this aggregate, however imperfectly understood, we give the name of *MIND*. Our organical frame, which seems to be only the instrument of information and operation to the mind, we call our *body*.

But as the animating principle is not, like our body, the immediate object of the senses, we naturally conceive it to be a substance essentially different from those which are the objects of our senses. The most savage nations have shown a disposition to form this conclusion. Observing that animal life was connected with breathing, it was natural to imagine that breathing was living, and that breath was life. It is a remarkable fact, that in most languages the term for *breath* is one of the terms for the soul; *מִט, פְּנוּמָה, spiritus*, in the Hebrew, Greek, and Latin, express both; *geist* or *ghost*, in the Teutonic, comes from *geisen*, to breathe or *figh*; *düba* or *düba*, the soul, in Sclavonic, comes from *duchat*, to breathe; and so in many other languages.

Very little refinement, however, is necessary to convince us, that air or breath cannot be the substance which thinks, wishes, and designs; and that the properties of this substance, whatever it is, must be totally different from, and incompatible with, any thing that we know of the immediate objects of our senses. Hence we are led to conclude, that there are two kinds of substances in nature: One which is the principle of sensation; and therefore, *cannot* be the object of our senses, more than light can be the object of the microscope. This substance alone can feel, think, desire, and propose, and is the object of *reflection* alone. The objects of our senses compose the other class, and therefore can have none of the other properties, which are not cognoscible by the senses. These have all the properties which our senses can discover: and we can have no evidence of their having any other, nor indeed any conception of their having them. This class is not confined to the unorganized masses of matter;

for we see that the bodies of animals lose after death that organical form, and are assimilated to all the rest of unthinking beings.

From such views as these, while all nations have agreed to call this class of objects by the name *BODY*, which originally expresses our organical frame, some nations, farther advanced in cultivation or refinement, have contrived an abstract term, to express this general substance of which all inanimate beings are composed. Such terms we have in the words *materies*, *mas*, *matter*, &c.

SECT. III. Of the DISTINCTION between MATERIAL and IMMATERIAL SUBSTANCES.

MATTER is that substance which is immediately and obviously cognoscible by our senses. Whatever is not thus cognoscible by our senses is *immaterial*; hence *mind* is said to be immaterial. It is of importance to keep in mind this distinction, which is more than merely *grammatical*. Little more is necessary for detecting the sophism of Helvetius, Mirabeau, and other sages of the Gallic school, who had endeavoured to remove the ties of moral and religious obligation, by lowering our conceptions of our intellectual nature. It also shows how hastily *they* have formed their opinions, who have ascribed to the immediate agency of mind, all those relations which are observed in the actions of bodies on each other at a distance. The characteristic phenomenon, or *distinguishing* quality of *mind* is *INTENTION*. The *phenomenon* by which this quality is suggested to us, is *art*, or the employment of *means* to gain *ends*; and the mark of art is the supposed conduciveness of these ends to the well-being of the agent. Where this train is not evident, design or intention is never thought of. We have, and can have, no motion of mind different from those of our own minds; and we discover the existence of other minds as we discover the existence of bodies, by means of phenomena, which are characteristics of minds, and which resemble those phenomena that follow the exertion of our own mental faculties, by the employment of means to attain selfish ends; and where such appearances are not observed, no existence of a mind is inferred. When we see a man fall from the top of a house, and dash out his brains on the pavement, we never ascribe this motion to his mind. Although the fitness of many of the celestial motions for most important purposes, makes us suppose design and contrivance somewhere, and therefore a *SUPREME MIND*, we no more think of inferring a mind in the earth, from the fitness of its motions, for purposes most beneficial to its inhabitants, than of inferring a mind in a bit of bread from its fitness for nourishing our bodies.

The term *MIND*, therefore, in the *ordinary language* of all men, is applied to what *desires* and *wills*, at the same time that it *perceives* and *understands*. If we call that mind which *produces motion*, we must derive our notions of its qualities or attributes from observing their effects. We must therefore discover the general laws by which they act, that is, the general laws observed in those motions which we consider as their effects. Now these are the general laws of motion; and in none of these can we find the least coincidence with what

whas we are accustomed to call *the laws of mind*, Nay, it has been the total want of similarity which has given rise to the distinction which all men, in all ages and countries, have made between mind and matter. This distinction is found in all languages; and it is an unpardonable liberty which men take with languages when they use a *term of distinction*, a *specific term*, to express things of a different species. What some modern authors have been pleased to call *mind*, the whole world besides have called by another name, *force*; which, though borrowed from our own exertions, is yet sufficiently distinctive, and never leads us to confound things that are different, except in the language of some modern philosophers, who apply it to the laws of agency of mind; and, when speaking of the force of motives, &c. commit the same mistakes which the followers of Aristotle commit in the use of the term *mind*. *Force*, in the language of these philosophers, means what connects the operations of mind; as *mind*, in the language of Lord Monboddo, is that which connects the operations of body.

The doctrine of *elemental minds*, therefore, as the immediate causes of the phenomena of the material world is an abuse of language. It is a jargon and a frivolous abuse, for it offers no explanation whatever.

"Of all mistakes that the naturalist can fall into, there is none more fatal to his progress in knowledge than the confounding things which are essentially different; and of all the distinctions which can be made among the objects of our contemplation, there is none of equal philosophical importance with this between *mind and matter*: And when we consider the consequences which naturally follow from this confusion of ideas, and particularly those which follow from sinking the mental faculties of man to a level with the operations of mechanics or chemistry, consequences which the experience of the present eventful day shows to be destructive of all that is noble or desirable in human nature, and of all that is comfortable in this life, and which blasts every hope of future excellence—we cannot be too anxious to have this capital distinction put in the plainest point of view. When we see the frenzy which the reasoning pride of man has raised in our neighbourhood, and hear the dictates of philosophy incessantly appealed to in defence of whatever our hearts shudder at as shocking and abominable; and when we see a man (M. DE LA METHERIE, *Journ. de Phys.* 1792-3.) of great reputation as a naturalist, and of professed humanity and political moderation, congratulating his countrymen on the rapid improvement and almost perfection of philosophy; and after giving a short sketch of the constitution of the visible universe, summing up all with a table of elective attractions, and that *particular combination and mode of crystallization which constitutes God (horresco referens!)*—is it not full time for us to stop short, and to ask our own hearts "whither are you wandering?"—But sound philosophy, reasoning from effects to their causes, will here listen to the word of our sacred oracles: "By their fruits ye shall know them." The absurd consequences of the sceptical philosophy of Berkeley and Hume have been thought, by

men of undoubted discernment, sufficient reasons for rejecting it without examination. The no less absurd and the shocking consequences of the mechanical philosophy now in vogue should give us the same abhorrence; and should make us abandon its blood-stained road, and return to the delightful paths of nature, to survey the works of God, and seat our eyes with the displays of mind, which offer themselves on every hand in designs of the most extensive influence and the most beautiful contrivance." *Enc. Brit.*

SECT. IV. Of the EXTENT of PHILOSOPHICAL STUDY.

SUCH are the objects of this Science, the subjects of philosophical study. The extent of the science is almost unbounded, reaching from an atom to God himself. It is necessary for the successful cultivation of this immense field of knowledge, that it be committed to different cultivators, and that its various portions be treated in different ways. Accordingly, the various tastes of men have given this curiosity different directions; and the study, like all other tasks, has been promoted by this division of labour.

Some ingenious naturalists have attended only to the appearances of fitness, which are exhibited in every quarter of the universe; and by arranging these into different classes, and interpreting them as indications of thought and intention, have acquired the knowledge of many classes of sentient and intelligent beings, actuated by propensities, and directed by degrees of reason. While the contemplation of these appearances indicates thought and design in any individual of one of these classes, and brings its propensities and purposes of action, and the ends gained by these actions, into view, the contemplation of these propensities, purposes, and ends, occasions an inference of a much more general kind.

All these sentient beings give indications of knowledge and of power; but their knowledge bears no proportion to their powers of action, and of attaining important ends; and their power is neither always, nor often the consequence of their knowledge. Where the effects of their actions are most eminently conducive to their interests, the power of attaining these ends is generally independent on any attention to the fitness of the means, and the exertion is often made without their even knowing of the end. The well-being of the individual is secured against danger by an extinctive propensity, which leads it to the performance of the necessary action, which is thus made immediately and ultimately desirable, without regard to its ultimate and important end. Thus, in our own nature, the support of animal life, and the improvement of the means of subsistence by a knowledge of the objects which surround us, are not intrusted to our apprehensions of the importance of these ends, but are committed to the surer guides of hunger and curiosity.

There is also a connection between the individuals of a class, different from that which arises from the mere resemblance of their external appearance, or even of their propensities and pursuits. These propensities are such, that while each individual seeks only its own enjoyment, these

these enjoyments are in general such as contribute to the support of the species and the enjoyment of other individuals. Thus, in the classes of animals, and in human nature, the continuance of the race, and the enjoyment of the whole, are not intrusted to the apprehension we entertain of the importance of these ends, but are produced by the operation of sexual love and the love of society.

Even the different classes of sentient beings are connected together; and while the whole of each class aim only at their own enjoyment, they contribute also to the well-being of the other classes. Even man, the selfish lord of this sublunary world, is not the unconnected inhabitant of it. He cannot reap all the fruits of his situation, without contributing to the enjoyment of thousands of his brute creation. Nay, it has even been proved, that while one race of animals, in consequence of its peculiar propensities, subsists by the destruction of another, the sum total of animal life and enjoyment is prodigiously increased. See a very judicious dissertation on this curious and puzzling subject, entitled *A Philosophical Survey of the Animal Creation*; where it appears that the increase of animal life and enjoyment which is produced by these means, beyond what could possibly obtain without it, is beyond all conception. See likewise the last edition of *King's Origin of Evil*, by Dr Law, late bishop of Carlisle.

In short the whole animal creation seems connected, and jointly employed in increasing the sum total of possible happiness. This fitness of the various propensities of sentient and intelligent beings, this subserviency to a general purpose, appear evident marks of intention, distinct from, and independent of, all the particular intentions, and superior to them all; and thus irresistibly lead to infer the existence of a SUPREME MIND, directing the whole of this INTELLECTUAL SYSTEM, while the individuals of which it consists appear the unconscious instruments in the hand of a great artist, with which he executes his grand and beneficent purposes.

But the bodies of the inanimate creation are not only connected with each other by a mutual dependence of properties, and the relation of causation, but they are also connected with the sentient beings by a subserviency to their purposes of enjoyment. The philosopher observes that this connection is admirably kept up by the constancy of natural operations and the expectations of intelligent beings. This adjustment, this fitness, of which the effect is the enjoyment of the sentient inhabitants of the universe, appear to be the effect of an intention of which this enjoyment is the final cause. This constancy therefore in the operations of nature, both in the intellectual and material world, and the concomitant expectation of sentient beings, appear the effects of laws imposed on the different parts of the universe by the Supreme Mind, who has formed both these classes of beings so admirably suited to each other.

SECT. V. Of the ORIGIN of NATURAL THEOLOGY.

To those who take such a comprehensive view of the present state of things, the world appears a WORK OF ART, a system of means employed for

gaining certain proposed ends, and it carries the thoughts forward to an ARTIST; and we infer a degree of skill, power, and good intention in this Artist, proportioned to the ingenuity, extent, and happy effect which we are able to discern in his works. Such a contemplation of nature, therefore, terminates in NATURAL THEOLOGY, or the discovery of the existence and attributes of GOD.

Our ideas of this SUPREME MIND arise from the indications of design which we observe. These will differ from our notions of other minds only in the degrees which we are able to observe, and which we assign to these faculties; for the phenomenon or the effect is not only the mark, but also the measure of its supposed cause. These degrees must be in proportion to our capacity of appreciating the extent, multiplicity, and variety of the contrivance. In proportion as our acquaintance with the operations of nature around us is extended, we perceive higher degrees of power, skill, and intention: and as the scene of observation is unbounded, we cannot affix any boundaries to these attributes, and we conclude that they are infinite or unbounded in their own nature. When our attentive survey of this universe, and a careful comparison of all its parts, have made us conclude that it is one design, the work of one Artist; we must infer, that, His power, wisdom, and benevolence, are indeed infinite.

When mankind had been led to draw this conclusion from the appearances of fitness observed every where around them, they considered that constancy which they observe in natural operations, whether in the material or the intellectual system, and that expectation of, and confidence in, this constancy, which renders the universe a source of enjoyment to its sentient inhabitants, as the consequences of laws imposed by the Almighty Artist on his works.

This view of nature is extremely captivating, and has engaged the curiosity of speculative men, respecting the phenomena of mind in all ages. Hence the general laws of moral sentiment came to be considered with attention. This gradually ripened into a regular system of moral duty, accompanied by its congenial study, the investigation of the *summum bonum*, or the chief constituent of human felicity; and these two branches of intellectual science were always kept in a state of association by the philosophers of antiquity. But jurisprudence, the science of government, legislation, and police, were certainly previously cultivated as arts, in subserviency to the demands of cultivated society; and all these so nearly related parts of the study of human nature had made a very considerable progress, in the form of precepts, for directing the conduct, before speculative men treated them as subjects of philosophical study. Our moral sentiments, always involving a feeling of obligation are expressed in a language considerably different from the usual language of pure philosophy, speaking of things which ought to be rather than of things which are; and this distinction of language was increased by the very aim of the writers, to influence the conduct as well as the opinions of their scholars. It was reserved for modern times to bring this study into the pure form of philosophy,

by a careful attention to the phenomena of moral sentiment, classing these according to their generality, and ascertaining their respective ranks by an appeal to the general conduct of mankind: and thus in the modern treatises on ethics, jurisprudence, &c. there is less frequent reference made to the *officia* or duties, or to the constituents of the *summum bonum*, than among the ancients.

SECT. VI. OF THE ORIGIN OF THE INTELLECTUAL SCIENCES.

It was impossible to proceed far in such disquisitions without attending to the powers of the understanding. Differences of opinion were supported by reasonings, or attempts to reasoning. Both sides could not be in the right. Rules of argumentation behaved to be acquiesced in by both parties; and it could hardly escape the notice of inquisitive minds, that there were rules of *truth* and *falsehood* as well as of *right* and *wrong*. Thus the human *understanding* became an object of study, first in subserviency to the demands of the moralists, but afterwards for its own sake; and it gradually grew up into the science of LOGIC. Farther refinement produced the science of METAPHYSICS. But all these were posterior to the doctrines of morals; and disquisitions on beauty, the principles of taste, the precepts of rhetoric and criticism, were the last additions to the study of the phenomena of mind. And now, since philosophers have agreed in the mode of investigation of general laws by experiment and observation, and that this is all the knowledge we can acquire of any subject whatever, it is to be hoped that this branch of philosophical discussion will attain the same degree of improvement (by the investigation of facts and experience) that has been attained by other sciences.

The necessary occupations, however, of ordinary life have oftener directed the efforts of men of genius towards material objects, and engaged their attention on their properties and relations; and as all sciences have arisen from arts, and were originally implied in them till separated from them by speculatists, the knowledge of the material system of nature was possessed in detached scraps by the practitioners in the various arts of life, long before the *natural philosopher* thought of collecting them into a body of science. But there have been in all ages men of curiosity, who have been struck by the uniformity of the operations of nature in the material world, and were eager to discover their causes. Accordingly, while the moralists and metaphysicians spent their time in investigating the phenomena of mind, and have produced the sciences of PNEUMATOLOGY, LOGIC, ETHICS, JURISPRUDENCE, and natural THEOLOGY, these observers of nature found sufficient employment in considering the phenomena of the material world.

The bodies of which it consists are evidently connected by those properties by which we observe that they produce changes in each other's situation. This assemblage of objects is therefore justly called the MATERIAL SYSTEM. It is frequently termed NATURE; and the terms NATURAL APPEARANCES, NATURAL CAUSES, NATURAL LAWS, have been generally restricted to those

which take place in the material system. This restriction, however, is improper, because there is no difference in the manner in which we form our notions of those laws, and reason from them, both with respect to mind and body. If there is to be any restriction, and if any part of the study of the universe is to be excluded in the application of these terms, it is that part only which considers moral obligation, and rather treats of what *ought* to be than of what *is*. But there is a considerable difference in the language which must be employed, though there is none in the principles of investigation. We have no proof for the extent of any moral law but an appeal to the feelings of the hearts of men, indicated by the general laws or facts which are observed in their actions. Some authors use the term *natural law* to express every coincidence of fact; and this is certainly the proper use of the term. The French writers generally use the term *loi physique* in this enlarged sense. But many authors, misled by, or taking advantage of, the ambiguity of language, after having established a law founded on a copious, and perhaps unexcepted, induction of the phenomena of the material system, (in which case it must be considered in its restricted sense,) have, in their explanation of phenomena, extended their principle much farther than the induction on which they had founded the existence of the physical law. They have extended it to the phenomena of mind, and have led their followers into great and dangerous mistakes. In nothing does the imperfection of language appear so remarkably as in distinctions concerning mind. Being a late subject of discussion, and interesting only to a few speculatists, we have no appropriated vocabulary for it; and all our disquisitions concerning its operations are in continual metaphor or figure, depending on very slight analogies or resemblances to the phenomena of the material world. This makes the utmost caution necessary; and it justifies the British philosophers who have successfully studied the intellectual system, in having, almost without exception, restricted the terms *natural laws*, *natural causes*, *natural philosophy*, and such like, to the material system. With us pneumatology makes no part of physics. And the sciences have fared better by the restriction of the terms. In no country has the spirit of liberal discussion been more encouraged and indulged than in Britain; and her philosophers have been equally eminent in both branches of science. Their performances in ethics, jurisprudence, and natural theology, are considered by all Europe as fountains of knowledge on these subjects; and LOCKE and CLARKE are names no less familiar on the continent than NEWTON. The licentious and degrading doctrines of the French school have as yet made little impression in Britain; and man is still considered among us as a glorious creature, horn to, and fitted for the noblest prospects.

PHYSICS, then, is with us the study of the material system, including both natural history and philosophy. The term is not indeed very familiar in our language; and in place of *physicus* and *disciplina physica*, we more generally use the terms *naturalist* and *natural knowledge*. The term *natural philosophy*, in its common acceptation, is of less

less extent. The field of physical investigation is full of prodigious extent; and its different departments require very different treatments, and have engaged in their cultivation persons of very different talents.

All the various phenomena of the material system may be arranged into two classes, distinguished both by their objects and the manner of treating them. The 1st class comprehends all the appearances which are exhibited in the *sensible motions* of bodies, and their actions on each other producing *sensible motion*. The 2d class comprehends the appearances which are exhibited in the *insensible motions* and actions of the invisible particles of matter.

We have examples of the phenomena of the first class in the planetary motions, the motions of heavy bodies, the phenomena of impulse, the motions and actions of machines, the pressure and motion of fluids, the sensible actions of magnetical and electrical bodies, and the motions of light. We have examples of the 2d class in the phenomena of heat and mixture, and those exhibited in the growth of animals and vegetable, and many phenomena of solid, fluid, magnetical, electrical, and luminous bodies; in which no change of place can be observed. Thus there is a distinction in the phenomena sufficiently great to warrant a division of the study, and to make us expect a more rapid improvement by this division.

SECT. VII. Of the ORIGIN of the USEFUL ARTS.

It is probable, that before men had recourse to agriculture as the most certain means of procuring subsistence, his acquaintance with external substances was principally that of the natural historian; consisting of a knowledge of their fitness for food, medicine, or accommodation, their places of growth or habitation, and the means of procuring them, depending on their manner of life or existence. It required a studied attention to these circumstances to give rise to agriculture, which therefore generally made its appearance after men had been in the practice of keeping flocks; by which means they were more at their ease, and had some leisure to attend to the objects around them, and in particular to those circumstances of soil and weather which affected the growth of their pasture.

When husbandry and simple medicines were thus established, they were probably the first arts which led men to attend to the operations of nature; and with these arts the general study of nature was thus divided into two different branches. The rude physician would be at first a collector of *specimens*; but by degrees he would observe resemblances among the operations of his drugs, and would class them according to these resemblances. His frequent recourse to the vegetable kingdom for medicines would cause him to attend more minutely to the plants which he had occasion to study than the husbandman to the multitude he is obliged to rear. The physician then would learn to think, the husbandman to work. An analogy between the economy of animal and vegetable life could hardly fail to engage the attention of the physician, and would make him a botanist.

From the same source, another science must

have arisen, by contemplating the appearances of animal and vegetable life, founded on a careful observation and accurate description of the wonderful machine. The phenomena of anatomy would be gradually discriminated and arranged; and the action of medicines, and the practice of physic and surgery, established in the form of a liberal or scientific art.

The husbandman in the mean time must have laboured the ground. He, too, was interested in the knowledge of the vegetable kingdom; and formed some rude system on the subject by which he regulated his labours; but he saw, that whatever was the nature of vegetable life, he must work hard, and he would search about for every thing which could diminish his labour. The properties of the lever, the wedge, and the inclined plane, would become familiar to him; and without knowing on what their efficacy depended, he used them with confident sagacity and effect. The strength of timber, the pressure and force of water, were daily seen and used by him and other artificers for their mutual accommodation; and some rude principles on these subjects were committed to memory. Many tools and simple machines become familiar, and thus the general properties of matter, and the general laws of the actions of bodies on each other, become gradually objects of observation and improvement. The general aim is to produce a greater quantity of work by the same exertion. When a man finds, that by increasing the length of his lever he increases the power of overcoming resistance, curiosity and interest lead him to inquire in what proportion his advantage increases. When he finds that a double length gives him a double energy, he will be surprised and mortified to find, that at the end of the day he has not performed twice the quantity of work: but, after much experience, he will learn, that every increase of energy, by a machine, is nearly compensated by an increase of time in the performance of his task; and thus one of the leading principles of practical mechanics was inculcated in a manner not to be forgotten, and the practical mechanic was brought to speculate about motion and force, and by gradual and easy steps the general laws of simple motions were established.

SECT. VIII. Of the ORIGIN of the MATHEMATICS.

It is clear that such speculations could not be carried on, nor any considerable knowledge acquired, without some acquaintance with the art of measurement; and the very question which the mechanic wished to solve, would lead to advances in this art, which in process of time refined itself into mathematics, the most perfect of all the sciences. All the phenomena of sensible motion afford employment to the mathematician. It is performed in a double or triple time, through a double or triple space, by a double or triple body, by the exertion of a double or triple force, produces a double or triple effect, is to the right or to the left, upwards or downwards, &c. In short, every affection of motion is an object of mathematical discussion. Such a science must have appeared early in the form of an art, in consequence of the mutual transactions of men.

These among an uncultivated people are chiefly in the way of baster. Numbers, weights, and measures would of consequence soon be studied, a few of the properties of plane and solid numbers and figures would become known, and the operations of multiplication and division, where arithmetic is combined with geometry. To most men the performance of a machine is a more attractive object than the properties of a figure, and the property of a figure more entertaining than that of a number; but the fact seems to have been otherwise among the antients. Before Pythagoras had invented the theorem which bears his name, (See PYTHAGORAS) and which is among the first elements of geometry, he had reformed the Grecian music by the addition of a note to their scale, which proceeds on a very refined speculation on the properties of numbers; so that among the Greeks arithmetic must have made considerable progress, while geometry was yet in its cradle: and we know to what astonishing length they prosecuted the science of pure geometry, while their knowledge of mechanical principles was almost nothing. There is such a distance, in point of simplicity, between pure mathematics and the most elementary mechanics, that the former continued to make rapid steps to improvement in more modern times, while the latter hardly deserved the name of science till very lately, when the great demand for it, by the increase of manufactures, both interested many in the study, and facilitated its progress, by the multitude of new machines invented by manufacturers and artisans: and even at present, to them we are indebted for almost every new invention in mechanics, and the speculatist seldom has done more than improve the invention, by exhibiting its principles, and thus enabling the artist to correct its imperfections; and now science and art go hand in hand, mutually giving and receiving assistance. The demands of the navigator for mathematical and astronomical knowledge have dignified these sciences; and they are no longer the means of elegant amusement alone, but merit the munificence of princes, who have erected observatories, and furnished voyages of discovery, where the mathematical sciences are at the same time cherished and applied to the most important purposes.

SECT. IX. *Of the UNDISCOVERABLE PHENOMENA of PHYSICS.*

IN various branches of Physics, particularly in the operations of chemistry, for instance, the *immediate* exertion of the cause is not perceived; all that we observe is the assemblage of particles which obtains before mixture, and that which takes place when it is completed, and which we consider as its result. The procedure of nature in producing the change, is unseen and unknown. The steps are hid from our observation. We are not only ignorant of the cause which determines one particle of our food to become a part of our body while others are rejected, but we do not see the operation. We are not only ignorant of the cause which determines a particle of the sulphuric acid to quit the fossil alkali with which it is united in Glauber salt, and to attach itself to a particle of magnesia already united with the muriatic acid, which also quits it to unite with the alkali, but we do not see

the operation. The particles and their motions are not the objects of our senses; and all that we see is the Epsum salt and common salt separated from the water in which we had formerly dissolved the sal mirabile and the muriated magnesia. The motions, which are the *immediate* effects of the changing causes, and therefore their *only indications, characteristics, and measures*, fitted to show their nature, are hid from our view.

Our knowledge therefore of these phenomena is less perfect than that of other phenomena; and we must content ourselves with the discovery of more remote relations and more remote causes, and with our ignorance of the very powers of nature by which these changes are brought about, and which are cognoscible only by their immediate effects, viz. the motions which they produce unseen. The knowledge which we do really acquire is somewhat similar to what the mechanical philosopher has acquired when he has discovered, by many experiments and investigations, that magnets attract each other by their dissimilar poles, and repel each other by their similar poles, and do not act at all on any bodies but loadstones and iron. Here we leave undiscovered all that is most curious in the phenomena, viz. how these attractions and repulsions are produced; and even here the magnetical philosopher has the advantage of seeing the agents and the operation.

Philosophers attending to this circumstance, that even in these cases the changes are produced by motions, or consist in motions, however unperceived these may be, have concluded, that the laws according to which nature operates in producing these changes are similar to the laws which regulate her operations in the sensible actions of bodies, or are included in them; and that the motions, though unseen, and the moving forces, are perfectly similar. They have therefore employed similar modes of investigation, applying the laws of impulse, and calling in the aid of mathematical knowledge. Of this we have many examples in the writings of Dr Freind, Keil, Bernoulli, Helsham, Boerhaave, Hartley, and others, who have delivered theories of fermentation, solution, precipitation, crystallization, nutrition, secretion, muscular action, nay even of sensation and intelligence, founded, as they think, on the laws of motion, and illustrated and supported by mathematical reasoning. Lord Verulam himself, that careful and sagacious distinguisher of intellectual operation, has gone into the same track in his explanation of the phenomena of fire and combustion; and even Sir Isaac Newton has made several attempts of the same kind, though with peculiarities which always characterise his discussions.

But the success of these philosophers has been such as they had reason to expect; for their whole trains of reasoning have proceeded on analogies which were assumed or *supposed* without authority. These ill-founded analogies have been mixed with hypotheses completely gratuitous. Certain forms have been assigned to the particles, and certain modes of action have been laid down for them, for whose reality we have not the least indication; and these fancied forms and laws of action have been such as are either self-contradictory

dictory and inconsistent, or such as would produce effects totally different from those which are observed. These *atomical theories*, as they are called, transgress every rule of philosophical discussion, and even the best of them are little better than trifling. See *OPPORTUNITY*, § 132-136.

This kind of inquiry has of late, however, become more rational; and along with the improvement and extension of mathematical philosophy, philosophers have given over their incessant attempts to explain every thing by *impulse*. We need not despair therefore of making still farther advances, if we will content ourselves with going no farther than Newton has done in his explanation of the planetary motions. He has immortalized his own name, and has added immensely to our stock of useful knowledge: yet he has stopped short at the discovery of the fact of universal gravitation; and all who have endeavoured to explain or account for this fact have only exposed themselves to pity. The road to farther discoveries has been also hinted by Sir Isaac Newton, who has expressed his suspicion, that as the great movements of the solar system are regulated by universal gravitation, so the mutual actions of the particles of matter are produced and regulated by tendencies of a similar kind, *equally* but not *more* inexplicable, and of which the laws of action are to be discovered by as careful an attention to the phenomena, and by the same patient thinking, which he has employed on the planetary motions. And a beautiful introduction to this new and almost unbounded field of enquiry has been given us by the celebrated Abbe BOSCONI, in his *Theory of Natural Philosophy*, where he has shown how such natural tendencies, similar in every ultimate particle of matter, and modified by conditions that are highly probable, nay almost demonstrable, will not only produce the sensible forms of solidity, hardness, elasticity, ductility, fluidity, and vapours, under an inconceivable variety of subordinate appearances, and the observed laws of sensible motion, but will go far to explain the phenomena of fusion, congelation, solution, crystallization, &c. &c. &c. both in chemistry and physiology. We recommend this work to the perusal of all who wish to have a clear idea of the internal constitution of natural bodies; and of the manner in which the uniting forces produce their sensible effects. Any person, possessed of a small share of mathematical knowledge, will be satisfied that the process of nature is not very different from what he describes.

But nature opens an immense and instructive volume; and posterity will long find employment in the perusal, even though advancing with the eagerness and success of the last century. We have not yet arrived at the threshold in many researches. In many parts of chemistry, for instance, we are as yet uncertain with respect to the phenomena themselves, which are the subjects of discussion. The composition of bodies must be fully understood before we explain the forces which unite their particles, or their modes of action. As long as WATER was considered as an

element, we were ignorant of the forces inherent in its particles; we are perhaps still ignorant of this; but we now know that they are extremely different from what they were formerly supposed to be. It is but in a very few cases of chemical combination, that we even know what are the ingredients; it is therefore too soon to speculate about their mode of union. Our ignorance of the real events in the animal and vegetable economy is still greater. Our first business, therefore, is to proceed in the accurate examination and classification of the phenomena; and, without attempting to give mechanical explanations, let us drop these hidden operations, and augment to the utmost our list of secondary laws of visible connections. All the mechanical speculations of BOYLE himself about the sensible qualities of things are now forgotten; but his chemical experiments preserve all their value, and are frequently referred to. The same may be said of the sagacious Dr HALE, whose fanciful notions of internal *conflicts*, *collisions*, and *vibrations*, have hardly diminished the value of the curious facts which he has established in the animal and vegetable economy.

This distinction in the nature of the phenomena, and this difference in the nature of the knowledge which is to be acquired, and the means which are to be employed for the successful prosecution of these two branches of general physics, has occasioned a farther restriction of the term NATURAL PHILOSOPHY, at least among British naturalists. It is particularly applied to the study of phenomena of the first class, while those of the second have produced the sciences of CHEMISTRY and PHYSIOLOGY. Natural philosophy and chemistry have generally been made particular institutions in our seminaries of learning, but physiology has more commonly been taught in conjunction with anatomy, medicine, and botany.

The phenomena of the first class have been usually called MECHANICAL, to distinguish them from those observed in the operations of chemistry, and in the animal and vegetable economy; and the explanations which have been attempted of some of the last, by applying the laws observed in the phenomena of the first class, have been called *mechanical explanations*. As this first class is evidently but a part of general physics, there is some impropriety in giving the name *natural philosophy* to a course of doctrines which is confined to these alone.

But, be that as it may, since the terms *chemistry* and *physiology* have been applied to two very important branches of general physics, we think that a more specific or characteristic name might be appropriated to the other, and that it might not improperly be named MECHANICAL PHILOSOPHY. It only remains to make a few observations on the different means of prosecuting these studies successfully, and to point out some advantages which may fully be expected from a careful prosecution of them; and as the 2d branch is fully treated under the articles CHEMISTRY, PHYSIOLOGY, &c. we shall confine ourselves to what is usually called NATURAL PHILOSOPHY.

SECT. X. Of NATURAL or MECHANICAL PHILOSOPHY.

MECHANICAL PHILOSOPHY may be defined, "the study of the sensible motions of the bodies of the universe, and of their actions producing these, with a view to discover their causes, to explain the phenomena, and to improve art." The principle upon which all philosophical discussion proceeds is, that "every change which we observe in the condition of things is considered by us as an effect, indicating the agency, characterising the kind, and measuring the degree of its cause."

In the style of mechanical philosophy, the cause of any change of motion is called a moving or changing force.

The disquisitions of natural philosophy must therefore begin with the consideration of motion, carefully noticing every affection or quality of it, so as to establish marks and measures of every change of which it is susceptible; for these are the only marks and measures of the changing forces. This being done, it only remains to apply them to the motions which we observe in the universe.

From the general principle of philosophical discussion already mentioned, there flow directly two axioms: 1. "Every body perseveres in a state of rest, or of uniform rectilinear motion, unless affected by some moving force." 2. "Every change of motion is in the direction and in the degree of the force impressed." These are usually called the LAWS of MOTION. They are more properly laws of human judgment, with respect to motion. Perhaps they are necessary truths, unless it be alleged that the general principle, of which they are necessary consequences, is itself a contingent, though universal truth. By these two axioms, applied in *abstracto* to every variety of motion, we establish a system of general doctrines concerning motions, according as they are simple or compounded, accelerated, retarded, rectilinear, curvilinear, in single bodies, or in systems of connected bodies; and we obtain corresponding characteristics and measures of accelerating or retarding forces, centripetal or centrifugal, simple or compound.

For an illustrious example of this abstract system of motion and moving forces, see Sir Isaac Newton's *Math. Princ. of Nat. Philos.* Book I. Euler's *Mechanica, sive Scientia Motus*, Herman's *Phoronomia, sive de Viribus Corporum*, and D'Alembert's *Traité de Dynamique*, are also excellent works. In this abstract system no regard is paid to the casual differences of moving forces, or the sources from which they arise. It is enough to characterise a double, accelerating force; for instance, that it produces a double acceleration. It may be a weight, a stream of water, the pressure of a man; and the force, of which it is said to be double, may be the attraction of a magnet, a current of air, or the action of a spring.

Having established these general doctrines, the philosopher applies them to the general phenomena of the universe, to discover the nature of the forces which really exist, and the laws by which their operations are regulated, and to explain interesting

but subordinate phenomena. This is the chief business of the mechanical philosopher.

The phenomena must be classed according to their resemblances, which infer a resemblance in their causes, and these classes must be arranged according to some principle. We have seen no method which appears to us less exceptionable than the following.

The principle of arrangement is the generality of the phenomena; and the propriety of adopting it arises from the probability it gives of readily discovering the most general actuating forces, whose agency is implicated in all other phenomena of less extent; and therefore should be previously discussed, that we may detect the discriminating circumstances, which characterise the subordinate phenomena, and mark the distinguishing inferior natural powers.

The most general of all phenomena is the curvilinear motion of bodies in free space; it is observed through the whole extent of the solar system. The mechanical history of nature begins, therefore, with astronomy. Here, from the general phenomena of the planetary motions, is evinced the fact of the mutual deflection of every body towards every other body, and this in the inverse proportion of the squares of the distance, and the direct proportion of the quantity of matter. This is the fact of UNIVERSAL GRAVITATION, indicating the agency, and measuring the intensity, of the universal force of mutual gravity.

The natural philosopher next proceeds to point out all the particular facts which are comprehended under this general fact, and whose peculiarities characterise the different movements of the solar system; that is, in the language of philosophy, he gives a theory or explanation of the subordinate phenomena; the elliptical motions of the planets and comets, their mutual disturbances; the lunar irregularities; the oblate figure of the planets; the nutation of the earth's axis; the precession of the equinoxes; and the phenomena of the tides and trade winds; and he concludes with the theory of the parabolic motion of bodies projected on the surface of this globe, and the motion of pendulums.

He also takes notice of the applications which may be made to the arts of life of the various doctrines which are successively established; such as chronology, astronomical calculation, dialling, navigation, gunnery, and the measuring of time.

If a square parcel of sand be lying on the table, and the finger be applied to any part of it to push it along the table, that part is removed where you will, but the rest remains in its place; but if it be a piece of sand stone of the same materials and shape, and the finger is applied as before, the whole is moved; the other parts accompany the part impelled by the finger in all its motions.

From the moon's accompanying the earth in all its motions round the sun, we infer a moving force which connects the moon and earth. In like manner, we must conclude that a moving force connects the particles of the stone; for we give the name force to every thing which produces motion: We call it the force of COHESION; a term which, like gravitation, expresses merely a fact.

This

This seems to be the next phenomenon of the universe in point of extent.

Having, from the general phenomenon, established the existence of this force, the philosopher proceeds to ascertain the laws by which its exertions are regulated; which is the ascertaining its distinctive nature and properties. This he does in the same way that he ascertained the nature of planetary gravitation; viz. by observing more particularly the various phenomena.

Here is opened a most extensive and varied field of observation; in which it must be acknowledged, that very little regular and marked progress has been made. The variety in the phenomena, and the consequent variety in the nature of the connecting forces, appear as yet inconceivably great; and there seems little probability of our being able to detect in them all any sameness, combined with any other distinguishing circumstances, as we have done in the case of gravity. Yet Boscovich has shown clearly, that, although we should suppose every atom of matter to be endued with a perfectly similar force, acting in a certain determined ratio of the imperceptible distances at which the particles of matter are arranged with respect to each other, the external appearance may and must have all that variety which we observe. He also shows how, from the operation of this force, must arise some of the most general and important phenomena which characterise the different forms of tangible bodies.

The chief varieties of the action of this CORPUSCULAR force are observed on the bodies which we call *hard, soft, solid, fluid, vaporous, brittle, ductile, elastic*. We see instances where the parts of bodies avoid each other, and require external force to keep them together, or at certain small distances from each other. This is familiar in air, vapours, and all compressible and elastic bodies.

This is evidently a most interesting subject of enquiry. On the nature and action of these corpuscular forces depends the strength or firmness of solids, their elasticity, their power of communicating motion, the pressure, and motion, and impulse of fluids; nay, on the same actions depend all the chemical and physiological phenomena of expansion, fusion, congelation, vaporisation, condensation, solution, precipitation, absorption, excretion, fermentation, and animal and vegetable concoction and assimilation. Out of this immense store of phenomena, we select those which lead directly to the production or modification of sensible motion.

1. The communication of motion among detached and free bodies, establishing the laws of impulse or collision. This has always been considered as the elementary doctrine of mechanical philosophy, and as the most familiar fact observed in the material world; and in all ages philosophers have been anxious to reduce all actions of bodies on each other to impulse, and have never thought the phenomenon completely explained or accounted for, till it has been shown to be a case of *impulse*. This it is which has given rise to a great variety of ridiculous and untenable hypotheses. (See OPTICS, § 133—136.) But the philosopher who has begun the mechanical study of nature by

the abstract doctrines of dynamics, and who has attended carefully to the many analogies between the phenomena of gravitation and cohesion, will entertain very different notions of this matter. He will be so far from thinking that the production of motion by *impulse* is the most familiar fact in nature, that he will acknowledge it to be comparatively very rare, if indeed it has ever been observed. (See OPTICS, § 134, 135.) And he will be disposed to think that the production of motion in this case is precisely similar to what we observe when we gently push one floating magnet towards another, with their similar poles fronting each other. There will be the same production of motion in the one and diminution of it in the other, and the same uniform motion of the common centre of gravity; and, in this case of the magnets, he sees completely the necessity of a law of motion, which is not an axiom, but is observed through the whole of nature, and which receives no explanation from any hypothesis of an intervening fluid, but is even totally inconsistent with them; viz. "that every action of one body on another is accompanied by an equal and opposite action of that other on the first." This is usually called the *equality of action and reaction*; it is *universal*; and it is a necessary consequence of the perfect similarity of the corpuscular forces of the same kinds of matter. This general fact, unaccountable on the hypothesis of impelling fluids, is considered in the planetary motions as the unequivocal indication of the sameness of that gravity which regulates them all. We should draw the same conclusion here, that the particles of tangible matter are connected by equal and mutual forces, which are the *immediate causes* of all their sensible actions, and that these forces, like gravitation, vary with every change of distance and situation.

The laws of collision and impulse being thus established, either as original facts, or as consequences of the agency of equal and mutual forces which connect the particles of matter, the philosopher considers,

2. The production of motion by the intervention of solid bodies, where, by reason of the cohesion of matter, some of the motions are necessarily confined to certain determinate paths or directions. This is the case in all motions round fixed points or axes, or along planes or curves which are oblique to the action of the forces. This part of the study contains the theory of machines, pointing out the principles on which their energy depends, and consequently furnishing maxima for their construction and improvement. (See MECHANICS. But these observations do not complete the discussion of the mechanism of solid bodies; they are not only solid and inert, but they are also heavy; therefore the action of gravity must be combined with the consequences of solidity. This will lead to discussions about the centre of gravity, the theory and construction of arches and roofs, the principles of stability and equilibrium, the attitudes of animals, and many particulars of this kind.

3. The philosopher will now turn his attention to another form, in which tangible matter exhibits many interesting phenomena, viz. FLUIDITY.

TV. Sir Isaac Newton says, "*a fluid is a body whose particles yield to the smallest impression, and by so yielding, are easily moved among themselves.*" But this definition is not thought sufficiently precise, as the words, *smallest impression*, and *easily moving*, convey no determinate idea. Euler offers some very plausible reasons for doubting whether it will account for the horizontal surface, and the complete propagation of pressure through the fluid in every direction; and therefore prefers selecting *this last phenomenon*, the propagation of pressure *quoad verum*, as the characteristic of fluidity, because a body having this constitution, will have every other observed property of a fluid. But this definition is hardly perspicuous, and the objections against Newton's more intelligible definition are not unanswerable. Bosovich defines a fluid to be, *a body whose particles exert the same mutual forces in all directions*; and shows, that such particles must be indifferent, as to any position, with respect to each other. If no external force act on them, they will have no tendency to arrange themselves in one position, rather than another; differing in this respect from the particles of solid, or soft, or viscid bodies; which require some force to change their respective positions, and which recover these positions again when but gently disturbed. He illustrates this distinction very beautifully, by comparing a parcel of balls thrown on quicksilver, and attracting each other, with a parcel of magnets in the same situation. The balls will stick together, but in *any position*; whereas the magnets will always effect a particular arrangement.

When the characteristic phenomenon of fluidity has been selected, the philosopher proceeds to combine this property with gravity, and establishes the doctrines of *HYDROSTATICS*, or of the pressure and equilibrium of heavy fluids, the propagation of this pressure in every direction; and demonstrates the horizontality of surface assumed by all perfect fluids. These doctrines and principles enable us to determine several very interesting circumstances respecting the mutual pressure of solids and fluids on each other; the pressures exerted on the bottoms and sides of vessels; the support, and whole mechanism of floating bodies, &c.

He then considers how fluids will move when their equilibrium of pressure is destroyed; and establishes the doctrines of *HYDRAULICS*, containing all the modifications of this motion, arising from the form of the vessels, or from the intensity or direction of the pressure which occasions it. And this subject is completed by the consideration of the resistance which fluids oppose to the motion of solid bodies through them, and their impulse on bodies opposed to their action. These are very important matters, being the foundations of many mechanical arts, and furnishing us with some of our most convenient and efficacious powers for impelling machines. They are also of very difficult discussion, and are by no means completely investigated. Much remains to be done, both for perfecting the theories, and for improving the arts which depend on them. On these doctrines depend the knowledge of the motions of rivers and of waves; the buoyancy, equi-

librium and stability of ships; the motion of ships through the waters; the action of the winds on the sails; and the whole arts of marine construction and seamanship.

Another general form of tangible matter exhibits very different phenomena, which are also extremely interesting; viz. *VAPOUR*. All the vapours known are heavy fluids: they are therefore subject to all the laws of pressure and impulse, which have been considered under the articles *HYDROSTATICS* and *HYDRAULICS*. But they are susceptible of great compression by the action of external forces, and expand again when these forces are removed. In consequence of this compression and expansion, the general phenomena of fluidity receive great and important modifications; and this class of fluids requires a particular consideration. As air is a familiar instance, this branch of mechanical philosophy has been called *PNEUMATICS*. Under this head we consider the pressure of the *ATMOSPHERE*; and its effects, both on solid and fluid bodies. It produces the rise of waters or other fluids in pumps and syphons, and gives us the theory of their construction: it explains many curious phenomena of nature, such as the motions in the atmosphere, and their connection with the pressure of the air, and its effect on the barometer or weather glass. Air, in motion, is called *WIND*; and it may be employed to impel bodies. The theory of its action, and of its resistance to moving bodies, are therefore to be considered.

Besides their motions of progression, &c. such as we observe in winds, compressible or elastic fluids are susceptible of what may be termed *internal motion*; a kind of undulation, where the contiguous parts are thrown into tremulous vibrations, in which they are alternately condensed and rarefied; and these undulations are propagated along the mass of elastic fluid, much in the same way in which we observe waves to spread on the surface of water. These undulations are also the more ordinary causes of sound. A trembling chord, or spring, or bell, agitates the air adjoining to it: these agitations are propagated along the air, and by its intervention agitate the organ of hearing. The mechanism of these undulations has been much studied, and furnishes a very beautiful theory of musical harmony.

The philosopher examines the *law of compressibility* of air and other elastic fluids; and thus gets the knowledge of the constitution of the atmosphere, and of the action of those fluids when employed to impel solid bodies. Gunpowder contains an immense quantity of permanently elastic air, which may be set at liberty by inflammation. When this is done at the bottom of a piece of ordnance, it will impel a ball along the barrel, and discharge it from the muzzle, in the same way that an arrow is impelled by a bow. Having thus discovered in what degree this air presses in proportion to its expansion, we discover its action on the ball through the whole length of the piece, and the velocity which it will finally communicate to it. Hence the theory of artillery and of mines. Chemistry teaches us, that most bodies can be converted by fire into elastic fluids, which can be employed to act on other bodies in the

way of preffure or impulse. They have become interesting by being employed as moving forces in some very powerful machines. See PROJECTILES.

The magnetical phenomena between magnets and iron, have long attracted attention: and the use to which the polarity of the loadstone has been applied, in directing the course of a ship through the pathless ocean, has rendered these phenomena extremely interesting. (See MAGNETISM.) Considerable progress has been made in the arrangement and generalization of them; but the attention of philosophers was, as usual, misplaced, by attempting to discover the ultimate cause of magnetism. Dr GILBERT of Colchester was the first who considered the magnetical phenomena in a truly philosophical manner; and his treatise *De Magnete*, published in 1580, may be considered as one of the most perfect specimens of the Baconian or inductive logic. ÆPINUS's *Elementa Theoriæ Magnetismi* is also a most valuable work.

Another class of mechanical phenomena have a considerable affinity with the magnetical; viz. those of ELECTRICITY. Certain bodies when rubbed or otherwise treated, attract and repel other bodies, and occasion a great variety of sensible motions in the neighbouring bodies. Philosophers have paid much attention to these appearances of late years, but have not been more successful in establishing a complete theory of them, than in the case of magnetism. Franklin and ÆPINUS have been most successful in this respect. Dr FRANKLIN has acquired great celebrity by his most judicious comparison of the phenomena: which has enabled him to establish a few general laws, almost as precise as those of Kepler, and of equally extensive influence. His discovery too of the identity of thunder and electricity, has given importance to the whole subject. There are many phenomena of electricity which cannot be called mechanical, yet are curious and interesting, and continue to engage much of the public attention.

The appearances presented by our sense of seeing form another branch of natural philosophy in all seminaries of learning. See OPTICS. They are not however properly mechanical phenomena. The nature of LIGHT is still a secret. The general laws of optics, however, are so few, so simple, and so precise, that our theories are more perfect in this science than in any other branch of physics, though as yet far removed from the rank of primary facts. Many unknown events happen before the phenomenon comes under the hands of the ordinary optician, so as to become the subjects of the simple laws of reflection and refraction. Apparition or visibility may be a quality of a body, depending on the proximity and position of another body, without any thing between them, as weight is; and this quality may be cognizable by our faculty of seeing alone, just as the preffure of a heavy body is by our feeling alone.

Mr ROEMER first made it probable, that mechanical philosophy had something to do with the phenomena of optics, by his discovery "that apparition was not instantaneous: that some time elapsed between the illumination of a body and its being seen at a distance. He discovered, that

it was not till 40 minutes after the sun illuminate d one of Jupiter's satellites that it was seen by an inhabitant of this globe. If, therefore, a sun were just created, it would be 40 minutes before Jupiter would be illuminated by him, and 200 before the Georgian planet would be illuminated. Here then is motion. It is therefore justly supposed, and indeed is highly probable, that there is something moved; but it is still doubted whether this something, which we call LIGHT, is a matter emitted from the shining body, and moving with great velocity, and acting on and affected by other bodies, in the various phenomena of optics; or whether it is a *certain state* of a medium which is thus propagated, as we see that waves are propagated along the surface of water, or sonorous undulations through the mass of air, while the water or air itself is hardly moved out of its place. See LIGHT, § 4. &c.

There are, however, many chemical facts, and facts in the vegetable economy, which give strong and almost undeniable indications of light being a body capable of chemical union with the other ingredients of sublunary bodies, and of being afterwards set at liberty under its own form, as the cause or medium of vision. But these are questions similar to those about the *cause of gravity*, and totally unnecessary for establishing a complete theory of the optical phenomena, the nature of vision, the cause of colours, the phenomena of the rainbow, halos, and periheliums, &c. &c. Such is the field of enquiry to the mechanical philosopher of the present day. We may hope to extend it; but we must, in the first place, perfect our knowledge of the sensible motions and actions of bodies. Those of FLUIDS still demand much investigation; and till these are thoroughly understood, it is too soon to attempt penetrating further into the recesses of nature.

In this study, it is found, that every change which can be observed in the state of a body, with respect to motion by the action of another body, is accompanied by an equal and opposite change in the state of that body. Thus, in the phenomena of gravitation, it is observed that the deflections of the sun and planets are mutual. The same thing is observed in the actions of magnets on each other and on iron; it is also observed in the attractions and repulsions of electrical bodies; and it obtains in all the phenomena of impulse and of corporeal preffure. It is therefore an universal law of motion, that *action is always equal and opposite to reaction*: but this must be considered merely as a matter of fact, a contingent law of nature, like that of gravitation. Much false reasoning has been introduced into mechanical philosophy, and particularly into the theory of impulsion or the communication of motion by impulse. In considering this subject, a term has been introduced which has occasioned much wrangling and misconception; we mean the term INERTIA. It serves indeed to abbreviate language, but it has often misled the judgment; and the doctrine of the VIS INERTIA of matter is now generally exploded. (See MECHANICS, Part III, Sect. II.

If the word *inertia* be taken as expressing, not a quality of matter, but a law of human judgment

nient respecting matter, as expressing our necessity of inferring the agency of a moving force whenever we observe a change of motion, all difficulties will vanish, and the equality of action and reaction will be inferred, as it should be from the phenomena of collision. There will be inferred a *vis inſita corpori impellenti, not quā moventi, but quā corpori*; and this inference will carry us through all the mysteries of corporeal action, as it conducted Sir Isaac Newton in his grand researches.

To illustrate this, let A and B be two magnets fastened on the ends of two long wooden laths AE, BF, which turn horizontally on pivots C, D, like compass needles, with their north poles fronting each other, 12 inches apart; and let A be pushed towards B, so that it would move uniformly with the velocity of two inches in a second. The phenomena which have been observed are as follow. A will gradually diminish its velocity; and when it has advanced about nine inches, will stop completely. B, in the mean time, will gradually acquire motion; and when it has advanced about nine inches, have a velocity of about two inches per second, with which it will continue to move uniformly. Because the motion of A is gradually retarded, we infer that a retarding force, that is, a force in the direction BA has acted on it. And since this would not have happened if B had not been there, and always happens when B is there, we infer that B is either its cause or the occasion of its action. The vulgar say that B repels A; so say the dynamists. The abettors of invisible fluids say, that a stream of fluid issuing from B impels A in the opposite direction. All naturalists agree in saying, that an active force connected with B has destroyed the motion of A, and consider this curious phenomenon as the indication and characteristic of a discovery. The same inference is made from the motion produced in B; it is considered by all as affected by a force exerted or occasioned by the presence of A; and the dynamists and the vulgar say that A repels B. And both parts conclude, from the equal changes made on both bodies, that the changing forces are equal; here acknowledging, that they observe an equality of action and reaction; and they add this to the other instances of the extent of this law of motion. All this while nobody thinks of the *inertia* or *inactivity* of B, but, on the contrary, conclude this to be a curious instance of its *activity*; and most people conclude that both bodies carry about with them a *vis inſita*, both when at rest and when in motion.

But if other phenomena give unquestionable evidence that, in ordinary collisions, there are the same changes of motion, produced without mathematical contact, the same inferences must be drawn; and a scrupulous naturalist will doubt whether contact should make any change in our reasonings on the subject, and whether actual

contact ever has been or can be observed. See OPTICS, § 153, 154.

Such seems to be the limit to our inquiries into all the classes of natural phenomena. We find the masses or the particles of matter endued in fact with qualities which affect the state of other particles or masses, at smaller or at greater distances from each other, according to certain general rules or laws. This ultimate step in the constitution of things is inferrible by us. It is arrogance to say, that because we do not comprehend how there is inherent in a body any quality by which another body may be affected at any distance from it, therefore no such quality is possible. It is no less so to say, that matter has no active property but that of moving other matter by impulse; and that because it may be so moved, and also by the agency of our own minds, therefore, when it is not moved by impulse, it is moved by minds. The same Almighty FIAT which brought a particle of matter into existence, could bring those qualities equally into existence; and the *how* in both is equally beyond our comprehension.

Yet we must guard against resting on this consideration as a stop to further inquiry. There may be species of matter possessed of the mechanical powers, which is not cognisable by our senses. All the properties of matter are not known to persons who are deaf and blind; and many phenomena may really be produced by the action of intervening matter, which we, from indolence or haste, ascribe to inherent forces. Philosophers have already discovered intermedia in some cases. It is certain that AIR is the conveyer of sound, and it is equally certain that there is such a thing as LIGHT. Let us therefore indulge conjectures, but let us examine these by the received laws of motion, and reject them when we find any inconsistency; always keeping in mind, that even the most coincident with the phenomena is still but a possibility.

These questions about the activity or inactivity of matter are not *physical*, but *metaphysical*. Natural philosophy commonly takes it for granted that matter is wholly inactive; but it is not of any moment in physics whether this opinion is true or false; whether matter is acted on according to certain laws, or whether it acts of itself according to certain laws, makes no difference to the natural philosopher. It is his business to discover the laws which really obtain, and to apply these to the solution of subordinate phenomena; but whether these laws arise from the nature of some agent external to matter, or whether matter itself is the agent, are questions which may be above his comprehension, and do not immediately concern his proper business.

The account now given of natural philosophy points out the way in which the study must be prosecuted. The causes, powers, or forces, which produce the mechanical phenomena of the universe, are known only in the phenomena themselves. Our knowledge of the mechanical powers of nature must therefore keep pace with our knowledge of the motions. To discover the forces by which the moon is retained in her orbit round the earth, we must know her motions. To

a terrestrial spectator she appears to describe an ellipse, having the earth in one focus; but, in the mean time, the earth is carried round the sun, and the moon's real path, in absolute space, is a much more complicated figure. Till we know his figure, and the variations in the velocity with which it is described, we know nothing of the forces which actuate the moon in her orbit. When Newton says, that the forces by which she is retained in this elliptical orbit are directed to the earth, he means only, that the deflection from that uniform rectilinear motion which she would otherwise have performed, are always in this direction. In like manner, when he says that these forces are inversely proportionate to the squares of her distances from the earth, he only means that the deflections made in equal times in different parts of her motion are in this proportion. These deflections are considered as the characteristics and measures of the forces. We imagine that we have made all plain, when we call this indicated cause a *tendency* to the earth; but we have no notion of this tendency to the earth different from the approach itself. This word tendency, so fashionable among the followers of Sir Isaac Newton, is perverted from its original sense. *Tendere versus solem*, is, in the language of Rome, and also of Newton, to go towards the sun; but we now use the words *tend, tendency*, to signify, not the *approach* but the *cause* of this approach. When these expressions have become familiar, the original sense of the word is forgotten, and this metaphor becomes a fruitful source of misconception and mistake. To secure ourselves against such mistakes from mystical notions, we must consider the way in which we acquire the knowledge of these fancied powers; and then we see that their names are only names for phenomena, and that universal gravitation is only an universal mutual approach among the parts of the solar system.

In a word, it is only in those parts of natural philosophy which have been mathematically treated, that the investigations have been carried on with certainty, success, and utility. Without his guide, we must expect nothing but a school-boy's knowledge.

MOTIONS are the real and only objects of our observation, the only subjects of our discussion. Motion is included no ideas but those of SPACE and TIME, the subjects of pure mathematical disquisition. As soon, therefore, as we have discovered the fact, the motion, all our future reasonings about this motion are purely mathematical, depending only on the affections of figure, number, and proportion; and must carry along with them that demonstration and irresistible evidence which is the boast of that science. To this are we indebted for that accuracy which is attained, and the progress which has been made in some branches of mechanical philosophy; for when the notions are distinctly and minutely understood, and then considered only as mathematical quantities, independent of all physical considerations, and we proceed according to the just rules of mathematical reasoning, we need not fear any intricacy of combination or multiplicity of steps; we are certain that truth will accompany us, and

will emerge in our final proposition, in the same manner as we see happen in a long and intricate algebraic analysis.

Mechanical philosophy, therefore, thus cultivated, is not a system of *probable* opinions, but a *demonstrative* science. To possess it, however, in this form, requires considerable preparation. The mere elements of geometry and algebra are by no means sufficient. Newton could not have proceeded *sine "sua matheſi ſuam præſeſcente"*; and, in creating a new science of physics, he was obliged to search for and discover a new source of mathematical knowledge. It is to be regretted that the taste for the mathematical sciences has declined in this country of late years; and that Britain, which formerly took the lead in natural philosophy, should now be the country where they are least cultivated. It is to foreign writers that we have recourse in our seminaries, even for *elementary treatises*; and while the continent has supplied us with the most elaborate and useful treatises on various articles in physical astronomy, practical mechanics, hydraulics, and optics, there has not appeared in Britain half a dozen treatises worth consulting for these last 50 years; notwithstanding the unparalleled munificence of our sovereign, who has given more liberal patronage to the cultivators of mathematical philosophy, and indeed of science in general, than any prince in Europe. The magnificent establishments of Lewis XIV. originated from his insatiable ambition, directed by the sagacious Colbert. And his patronage being exerted according to a regular plan of pensioned academics, and in procuring the combined efforts of the *most eminent* men of all countries, all Europe was filled with his eulogists. But all this was done without the smallest retrenchment of his pleasures, the expences being furnished out of the public revenues of a great and oppressed nation; whereas, the voyages of discovery, the expensive observations and geodetical operations in Britain, and the numerous pensions given to men of science and activity, were all furnished out of the private estate of our excellent sovereign, who seems to delight in repaying, by every service in his power, the attachment of a loyal and happy nation. It is therefore to be wished, that his patriotic efforts were properly seconded, and that the taste for the mathematical sciences may again turn the eyes of Europe to this country for instruction and improvement. The present seems a most favourable era for that purpose.

On the whole, mechanical philosophy is almost entirely a mathematical study, and is to be successfully prosecuted only under this form; but in our endeavours to initiate the young student, it will often require more readiness of thought than can generally be expected in such abstract speculations. It is usual therefore to employ experiments to assist the young student; and most courses of natural philosophy are accompanied by a series of such experiments, connected by a slight train of argumentative discourse. Such are the usual courses which go by the name of *experimental philosophy*; although such courses are little more than *illustrations* of known doctrines by experiments.

SECT. XI. Of EXPERIMENTAL PHILOSOPHY.

EXPERIMENTAL PHILOSOPHY is the investigation of general laws by experiment; and, as observed under the article PHILOSOPHY, it is the most infallible, if not the only way of arriving at the knowledge of them. This is the *Novum Organum Scientiarum*, so strongly recommended by Lord VERULAM. It was new in his time, though not without example; for there was even in his time a very beautiful example of this method, viz. the *Treatise on the Loadstone*, by Dr Gilbert of Colchester; a work which has been hardly excelled by any, and which, when we consider its date, 1580, is really a wonderful performance. The most perfect model of this method is Sir Isaac Newton's *Opticks*. Dr Black's *Essay on Magnesia* is another. Dr Franklin's *Theory of Electricity* is another example of great merit. That the investigation is not complete, is not an objection. The method is without fault; and a proper direction is given for the experiments still necessary for establishing the general laws.

But although many beautiful and successful examples have been given as particular branches of inquiry, there are many instances of very inaccurate and inconclusive investigations. Experiments made at random, almost without a view, serve but little to advance our knowledge. Every little series of experiments by Margraf terminates in a general law, while hardly any general conclusion can be drawn from Pott's numerous experiments. Lord VERULAM has written much on this subject, and with great judgment; but he has in this fatigued his reader by his numerous rules; which are rather obscure, so that this valuable part of his writings is little read.

A formidable objection has been made to this method of inquiry. Since a physical law is only the expression of a general fact, and is established only in consequence of our having observed a similarity in a great number of particular facts; and since the great rule of inductive logic is, to give the law no greater extent than the induction on which it is founded, why should a few experiments be received as the foundation of a general inference? This has been partly answered in the article PHILOSOPHY. But it may be of use to consider the subject more particularly; in doing which we shall quote some observations from the dissertation on evidence by Dr Campbell in his *Philosophy of Rhetoric*.

From an attentive consideration of the objects around us, we find that they are generally of a complicated nature, not only as consisting of a complication of those qualities called accidents, such as gravity, mobility, colour, figure, solidity, which are common to all bodies; but also as consisting of a mixture of variety of substances, different in their nature and properties; each of which is perhaps compounded of ingredients more simple. "The farther we advance in the knowledge of nature, the more her constancy in all her operations appears. Like causes always produce like effects, and like effects are always preceded by like causes. Inconstancy sometimes appears in Nature's works at first sight; but a more refined experience shows us that this is but an appearance,

and that there is no inconstancy; and we explain it thus: Most objects being of a complicated nature, we find, on an accurate scrutiny, that the effects ascribed to them ought often to be solely ascribed to some of their component parts; and the variety of nature is so great, that hardly any two individuals of the same species are in every respect alike. On these accounts we expect dissimilarities in the phenomena accompanying perfectly similar treatment of different subjects of the same kind; but we find, that whenever we can be assured that the two substances are perfectly alike, the phenomena arising from similar treatment are the same; and extensive observation teaches us, that there are certain circumstances which insure us the perfect similarity of constitution of some things. When therefore we observe the effect of any natural agent on one of these, we expect that the same will be produced on any other.

If a botanist should meet with a new plant, and observe that it has 7 monopetalous flowers, he will conclude that every plant of this species will have monopetalous flowers; but he will not suppose that it will have only seven flowers.

Thus we learn, that perfect uniformity is not to be expected in any instance whatever, because in no instance is the simplicity of constitution sufficiently great to give us assurance of perfect uniformity in every circumstance of the case. The nearer, however, that our investigations carry us to the knowledge of elementary natures, the more are we convinced by general experience of the uniformity of the operations of real elements; and although it may perhaps be impossible for us ever to arrive at the knowledge of the simplest ELEMENTS of any body, (See CHEMISTRY, Index.) yet when any thing appears simple, or rather too exactly uniform, as that we have invariably observed it to produce similar effects on discovering any new effect of this substance, we conclude, from a general experience of the efficient, a like constancy in the energy as to the rest. Fire consumes wood, melts metals, and hardens clay. In these instances it acts uniformly. If therefore a trial be made for the first time of its influence on any particular substance, he who makes it is warranted to conclude that the effect will be the same.

This general conclusion, therefore, drawn from one experiment, is by no means in opposition to the great rule of inductive logic, but, on the contrary, it is the most refined application of it. A law still more general, viz. that nature is constant in all its operations, is the inference which is here applied as a principle of explanation of a phenomenon which is itself a general law, viz. that nature is constant in this operation. The foundation of this general inference from one experiment being established, experiments must be an infallible method of attaining to the knowledge of nature; and we need only take care to proceed in a way agreeable to the great rule of inductive logic; that is, the subject must be cleared of every accidental and unknown circumstance, and put into a situation that will reduce the interesting circumstance to a state of the greatest possible simplicity. Thus we may be certain that the event will be a faithful representative of every similar case; and unless this be done in the preparation, nothing can result.

fault from the most numerous experiments but uncertainty and mistakes.

The account given above of MECHANICAL PHILOSOPHY would seem to indicate, that experiment was not of much use in the farther prosecution of it. The two laws of motion, with the assistance of mathematics, seem fully adequate to the explanation of every phenomenon; and so they are to a certain degree. But this degree is as yet very limited. Our mathematical knowledge, great as it is in comparison with that of former times, is still inadequate to give accurate solutions even of very simple questions. We can tell, with the utmost precision, what will be the motions of two particles of matter, or two bodies, which act on each other with forces proportioned to the squares of the distances inversely; but if we add a third particle, or a third body, acting by the same law, the united science of all Europe can only give an approximation of the solution. What is to be done then in the cases which often occur, where millions of particles are acting at once on each other in every variety of situation and distance? How shall we determine the motion of water through a pipe or sluice when urged by a piston or by its own weight? what will be its velocity and direction? It is impossible, in the present state of mathematical knowledge, to tell with any precision or certainty. We must have recourse to experiment. But if this be the case, must the experiment be made in every possible variety of situation, depth, figure, pressure? or is it possible to find out any general rules, founded on the general laws of motion, and rationally deduced from them? Or, if this cannot be accomplished, will experiments furnish any general coincidences which show such mutual dependences, that we may consider them as indications of general principles, though subordinate, complicated, and perhaps inscrutable? This can be discovered by experiment alone.

Philosophers have turned their attention to each of these three chances, and considerable progress has been made in them all. Numerous experiments have been made, almost sufficient to direct the practice in many important cases, without the help of any rule or principle whatever. But there are many cases, and these of by far the greatest importance, such as the motion of a ship impelled by the winds, resisted by the water, and tossed by the waves, where distinct experiments cannot be made.

NEWTON, BERNOULLI, D'ALEMBERT, and others, have laboured hard to deduce from the laws of motion rules for determining, what may be called the average motion of water in these circumstances, without attempting to define the path or motion of any individual particle; and they have actually deduced many rules which have a great degree of probability. But the premises are only *suppositions*, assumed to simplify the circumstances, and to give room for mathematical reasoning; therefore these rules and deductions must be examined by experiment. Some of the suppositions are such as can hardly be raised, and the rules deduced from them are found to tally precisely with the phenomena. Such is this, that the

velocities of issuing water in similar circumstances are, in the sub-duplicate ratio of the pressures." And this rule gives a most important and extensive information to the engineer. Other suppositions are more gratuitous, and the rules less coincident with phenomena. The sagacious Newton repeatedly failed in his attempts to determine what is the *absolute velocity* of water issuing from a hole in the bottom of a vessel when urged by its weight alone, and the attempts of others have succeeded no better. Experiment is therefore still necessary.

Those who have aimed at the discovery of *rules* purely experimental, have been pretty successful. Chevalier Buat has, from a comparison of an immense variety of experiments, deduced an empirical rule, which will not be found to deviate from truth above one part in ten, in any case which has yet come to our knowledge. This instance may show the use of experiments in mechanical philosophy. It is proper in all cases by way of illustration; and it is absolutely necessary in most, either as the foundation of a characteristic of a particular class of phenomena, or as argument in support of a particular doctrine. Hydrostatics, hydraulics, pneumatics, magnetism, electricity, and optics, can hardly be studied in any other way; and they are at present in an imperfect state, and receiving continual improvement by the labours of experimental philosophers in all quarters of the world.

Having thus given a pretty full enumeration of the different subjects to be considered in the study of natural philosophy, it is needless to spend time in a detail of the advantages which may be expected from a prosecution of this study. Its intimate connection with the arts gives it a sufficient recommendation to the attention of every person. It is the foundation of many arts, and gives liberal assistance to all. To this science the navigator must have recourse for that astronomical knowledge which enables him to find his place in the trackless ocean; and although very small scraps of this knowledge are sufficient for the mere pilot, the study must be prosecuted to the utmost by some persons, that the unlearned pilot may get that degree of it which must direct his routine. The tables of the sun's declination, which he uses to find his latitude, require the successive and united labours of all the astronomers of Europe to make them tolerably exact; and to ascertain his longitude with precision, it required all the genius of a Newton to detect the lunar irregularities, and bring them within the power of the calculator. Till this was done, the respective position of the different parts of the earth could not be ascertained. Vain would have been the attempt to do this by geodetical surveys independent of astronomical observation. It is only from the most refined mechanics, that we can hope for sure principles to direct us in the construction and management of a ship, the great means of communication between the different quarters of the globe.

A knowledge of mechanics little inferior to this is necessary to enable the architect to execute some of his greatest works, such as domes and arches, which depend on the nicest adjustment of equilibrium. Without this he cannot unite economy with

with strength: and his works must be either clumsy masses or flimsy shells. The effects of artillery cannot be understood or secured without similar knowledge. The whole employment of the engineer, civil or military, is a continual application of almost every branch of mechanical knowledge; and while the promises of a Smeaton, a Watt, a Belidor, may be confided in, the numberless failures and disappointments in the most important and costly projects show us daily the ignorance of the crowd of engineers.

The microscope, the steam engine, the thunder-rod, are presents which the world has received from the natural philosopher; and although the compass and telescope were the productions of chance, they would have been of little service, had they not been improved by Gilbert, Halley, and Dollond. But it is not in the arts alone that the influence of natural philosophy is perceived: it lends its aid to every science, and in every study. It is often necessary to have recourse to the philosopher, in disputes at law concerning property; and many examples might be given where great injustice has been the consequence of the ignorance of the judges. Knowledge of nature might have prevented many disgraceful condemnations for sorcery. The historian who is ignorant of natural philosophy, easily admits the miraculous into his narrations, accompanies these with his reflections, draws consequences from them, and fills his pages with prodigies, fables, and absurdity.

It is almost unnecessary to mention the advantages which accrue to the physician from this study. So close is the connection between it and medicine, that our language has given but one name (PHYSIOLOGIST,) to the naturalist and to the medical philosopher. Indeed, the whole of his study is a close observation of the laws of material nature, to draw from them precepts to direct his practice in the art of healing. A knowledge, therefore, of the mechanical laws of the material world is not only a convenient, but a necessary accomplishment to the physician. We are justified in this opinion, by observing medical authors introducing into medicine, theories borrowed from mechanical philosophy, which they do not understand, and which they therefore misapply.

But there is no class of men to whom this science is of more service, than to the teachers of religion. Their knowledge in their own science, and their public utility, are much hurt by ignorance of the general constitution of nature; and it is to be regretted, that this science is generally neglected by them, or considered only as an elegant accomplishment: nay, it is too frequently shunned as a dangerous attainment, as likely to unhinge their own faith, and taint the minds of their hearers. We hope, however, that few are so feebly rooted in the belief of the great doctrines of religion as to fear this. But many have a sort of horror at all attempts to account for the events of nature, by the intervention of general causes, and think this procedure derogatory to the Divine nature, and inconsistent with the doctrine of his particular providence. Their limited conceptions cannot perceive, that, in forming the general law, the Great Artist did at one glance see it in its re-

most and most minute consequences, and adjust the vast assemblage so as completely to answer every purpose of his providence. There never was a more eager inquirer into the laws of nature, or at the same time, a more ardent admirer of its glorious Author, than the Hon. Robert Boyle. Greatly mistaken, therefore, are they who think that we supersede the existence of *MIND* and of providence when we trace things to their causes. A physical law being an unvaried fact, is an indication, and the strongest possible indication, of an unerring mind, who is incapable of change. The operations of unerring mind will therefore be regular and invariable. Physical laws, therefore, or secondary causes, are the best proofs of unerring wisdom. Such regularity of conduct is universally considered as indications of wisdom among men. And what astonishing evidences of wisdom do we not observe in the general laws of the material world? They will ever be considered by the intelligent philosopher as the most glorious display of inconceivable wisdom, which has been able, by means so few and so simple, to produce effects, which, by their grandeur, astonish our feeble understandings, and by their inexhaustible variety, elude all possibility of enumeration.

While the teachers of religion remain ignorant of the beautiful laws of nature, the great characteristics of the wisdom and goodness of the Almighty Creator, their hearts are deprived of much sublime pleasure; the Deity is deprived of that praise which he would receive from an enlightened people; and the only worship he receives is tainted with mean notions of his attributes, and groundless fears of his power.

Let none be afraid of the pernicious effects of philosophy, in consequence of the dreadful explosion which the vanity of man has lately made in France. The Russians who lately ruled in that unhappy country, still groaning under despotism, continually imputed to the illumination of philosophy, the ardour which animated them in the cause of liberty; and they pretended that justice and morality were the order of the day. But their whole professions of liberty and philanthropy were contradicted by their practice. The sacred name of philosophy was as unfit for their faithless and bloody mouths as the names of liberty or virtue, and was equally misapplied. No wonder that religion fled from the torch of their philosophy: for their philosophy consisted expressly in the confounding the most distinct classes of phenomena and of beings, in assimilating the heavenly animating spark within us to a piece of rude matter, and in degrading man to the level of the brutes, and thus shutting out his fairest prospects. This they did in the face of the world, when they passed an act of the convention, to put an inscription on all church-yard doors, that "*Death is only eternal sleep.*" But it is not by the ordinary exertions of the divine, that such sacrilegious confusion can be rectified: this requires an intimate acquaintance with what is characteristic of *mind* and what is characteristic of *matter*, and a comprehensive view of the general laws which regulate the appearances in both classes of objects. Thus, and thus alone, will the divine be able to confute the detestable sophisms of Mirabeau, Diderot,

lerot, and the other *soi-disant* sages of France, besides these advantages which arise to different classes of men from this study, there are some effects which are general, and are too important to be passed over. That spirit of dispassionate experimental enquiry, which has so greatly promoted his study, will carry with it; into every subject of inquiry, that constant appeal to fact and experience which characterise it. And the superior method which distinguish some of the latter productions in other sciences, have been in a great measure owing to this mathematical spirit, the success of which in natural philosophy, has gained it credit, and thus given it an unperceived influence even over those who have not made it their study. The truths also which the naturalist discovers, are such as do not in general affect the passions of men, and have therefore a good chance of meeting with a candid reception. Those whose interest it is to keep men in political or religious ignorance, cannot easily suspect bad consequences from improvements in this science; and if they did, have hardly any pretext for checking its progress. And discoveries accustom the mind to novelty; and it will no longer be startled by any consequences, however contrary to common opinion. Thus the way is paved for a rational scepticism, and a

free enquiry on other subjects. Experiment, not authority, will be considered as the test of truth; and under the guidance of experience we need fear no ill.

Finally, as it is the business of philosophy to describe the phenomena of nature, to discover their causes, to trace the connection and subordination of these causes, and thus obtain a view of the whole constitution of nature; it is plain that it affords the surest path for arriving at the knowledge of the great cause of all, of God himself, and for forming proper conceptions of him, and of our relations to him: notions infinitely more just than can ever be entertained by the careless spectator of his works. Such a contemplation is in the highest degree pleasant and cheering, and cannot fail of impressing us with the wish to co-operate in the glorious plan, by acting worthy of the place we hold among the works of God, and with the hopes of one day enjoying all the satisfaction that can arise from conscious worth and consummate knowledge; and this is the worship which God will approve. "This universe (says Boyle) is the magnificent temple of its great Author; and man is ordained, by his powers and qualifications, the high priest of nature, to celebrate divine service in this temple of the universe." *Enc. Brit.*

P H R

* **PHYSIOGNOMER.** See **PHYSIOGNOMIST.**

* **PHYSIOGNOMICK.** See **PHYSIOGNOMONICK.**

* **PHYSIOGNOMIST.** *PHYSIOGNOMER. n. f.* [*physiognomiste*, Fr. from *physiognomy*.] One who judges of the temper or future fortune by the features of the face.—A *physiognomer* wished he might not die, because he would sow much dissention among the Christians. *Peachment*.—Apelles made his pictures so very like, that a *physiognomist* and fortune-teller foretold, by looking on them, the time of their deaths whom those pictures represented.

P H R

Dryden.—Let the *physiognomists* examine his features. *Arb. and Pope.*

(1.) * **PHYSIOGNOMONICK.** *PHYSIOGNOMICK. adj.* [*physiognomonick*; from *physiognomy*.] Drawn from the contemplation of the face; conversant in contemplation of the face.

(2.) **PHYSIOGNOMONICS.** *n. f.* among physicians, denote such signs as, being taken from the countenance, serve to indicate the state, disposition, &c. both of the body and mind; and hence the art of reducing these signs to practice is termed *physiognomy*.

P H I S I O G N O M Y.

PHYSIOGNOMY is thus defined by Dr Johnson:

* **PHYSIOGNOMY.** *n. f.* [for *physiognomy*; *επισγνωμονια*; *physiognomic*, French.] 1. The act of discovering the temper, and foreknowing the fortune by the features of the face.—In all *physiognomy*, the lineaments of the body will discover those natural inclinations of the mind which dissimulation will conceal. *Bacon's Nat. Hist.* 2. The face the cast of the look.—

The astrologer, who spells the stars,
Mistakes his globes, and in her brighter eye
Interprets heaven's *physiognomy*. *Cleaveland.*

They'll find it the *physiognomies*
O' th' planets all men's destinies. *Hudibras.*
—The end of portraits consists in expressing the true temper of persons, and to make known their *physiognomy*. *Dryden*.—The peculiar *physiognomy* of the mind is most discernible in children. *Locke.*

PHYSIOGNOMY is formed from the Greek *επισγνωμονια*, and *γνωμον*, *I know*. It is a science which

occupied much of the attention of ancient philosophers, and which, since the revival of learning, has been much disregarded.

"Till of late," (says the ingenious WILLIAM MAXWELL MORISON, Esq. whose account we shall use the freedom to quote,) "it has seldom, in modern times, been mentioned, except in conjunction with the exploded arts of magic, alchemy, and judicial astrology. It does not appear that the ancients extended the compass of physiognomy beyond man, or at least animated nature: But the study of that art was revived in the middle ages, when, misled probably by the comprehensiveness of the etymological meaning of the word, or incited by the prevalent taste for the marvellous, those who treated of the subject stretched the range of their speculation far beyond the ancient limits. The extension of the signification of the term was adopted universally by those naturalists who admitted the theory of signatures (see **SIGNATURE**); and physiognomy came thus to mean the

the knowledge of the *internal* properties of any corporeal existence from the *external* appearances. John Baptist Porta, for instance, who was a physiognomist and philosopher of considerable eminence, wrote a treatise on the physiognomy of plants (*physiognomica*), in which he employs physiognomy as the generic term. There is a treatise likewise *De Physiognomia Avium*, written by the same person. In the *Magia Physiognomica* of Gaspar Schottus, *physiognomia humana* is made a subdivision of the science.

"BOYLE too adopts the extensive signification above mentioned, which indeed seems to have been at one time the usual acceptance of the word. At present physiognomy seems to mean no more than "a knowledge of the moral character and extent of intellectual powers of human beings, from their external appearance and manners."

"Physiognomy was much cultivated in Egypt and India; and from these countries Pythagoras probably introduced the rudiments of this science, as he did those of many others, into Greece. In the time of Socrates it appears even to have been adopted as a profession. Physiognomy, Aristotle observes, had been treated of in three ways: Some philosophers classed animals into genera, and ascribed to each genus a certain mental disposition corresponding to their corporeal appearance. Others made a farther distinction by dividing the genera into species. Among men, for instance, they distinguished the Thracians, the Scythians, the Egyptians, and whatever nations were strikingly different in manners and habits, to whom accordingly they assigned the distinctive physiognomical characteristics. A third set of physiognomists judged of the actions and manners of the *individual*, and presumed that certain manners proceeded from certain dispositions. But the method of treating the subject adopted by Aristotle himself was this: A peculiar form of body is invariably accompanied by a peculiar disposition of mind; a human intellect is never found in the corporeal form of a beast. The mind and body reciprocally affect each other: thus in intoxication and mania the mind exhibits the affections of the body; and in fear, joy, &c. the body displays the affections of the mind.

"From such facts he argues, that when in man a particular bodily character appears, which by prior experience and observation has been found uniformly accompanied by a certain mental disposition, with which therefore it must have been necessarily connected; we are entitled in all such cases to infer the disposition from the appearance. Our observations, he conceives, may be drawn from other animals as well as from men: for as a lion possesses one bodily form and mental character, a hare another, the corporeal characteristics of the lion, such as strong hair, deep voice, large extremities, discernible in a human creature, denote the strength and courage of that noble animal; while the slender extremities, soft down, and other features of the hare, visible in a man, betray the mental character of that pusillanimous creature.

"Upon this principle ARISTOTLE treats of the corporeal features of man, and the correspondent dispositions, so far as observed: he illustrates them by the analogy just mentioned, and in some in-

stances attempts to account for them by physiological reasoning.

"Considering the early period in which Aristotle wrote, his theory, which is plausible, and even probable, displays his usual penetration and a considerable degree of knowledge. He distinctly notices individual physiognomy, national physiognomy, and comparative physiognomy. The state of knowledge in his time did not admit of a complete elucidation of his general principles; on that account his enumeration of particular observations and precepts is by no means so well founded or so accurate, as his method of study. Even his style, concise and energetic, was inimical to the subject; which, to be made clearly comprehensible, must require frequent paraphrases. Aristotle's performance, however, such as it is, has been taken as the ground-work and model of every physiognomical treatise that has since appeared.

"The imitators of this great man in the 16th and 17th centuries have even copied his language and manner, which are sententious, indiscriminate, and obscure. His comparative physiognomy of men with beasts has been frequently, though not universally adopted.

"Next after Aristotle, his disciple and successor THEOPHRASTUS deserves to be particularly mentioned as a writer on this subject.

"POLEMON of Athens, ADAMANTIUS the philosopher, and several others, wrote on the subject about the same period. Lately there was published a collection of all the Greek authors on physiognomy: the book is entitled, *Physiognomix veteris scriptores Græci Gr. & Lat. a Franzio Allenb. 1780, 8vo.* From the number of these authors; it appears that the science was much cultivated in Greece; but the professors seem soon to have connected with it something of the marvellous.

"From that period to the close of the Roman republic, nothing worthy of remark occurs in the literary history of physiognomy. About the last mentioned era, however, and from thence to the decline of the empire under the later emperors, the science appears to have been cultivated as an important branch of erudition, and assumed as a profession by persons who had acquired a superior knowledge in it.

"The science of physiognomy shared the same fate with all others, when the Roman empire was overthrown by the northern barbarians. About the beginning of the 16th century it began again to be noticed.—From that time till the close of the 17th it was one of the most fashionable studies. Within that space have appeared almost all the approved modern authors on the subject. They are, Bartholom. Cocles, Baptista Porta, Honoratus Niquetius, Jacobus de Indagine, Altedius, Michael Schottus, Gaspar Schottus, Cardan Taishierus, Fludd, Behmen, Barclay, Claromontius, Conringius, the commentaries of Augustin Niphus, and Camillus Balbus on the *Physiognomica* of Aristotle.—Spontanus, Andreas Henricus, Joannes Digander, Rud. Goclenius, Alex. Achillinus, Joh. Prætorius, Jo. Belot, Guliel. Gratalorus, &c. They are noticed in the Polyhistor. of Morhoff. vol. i. lib. 1. cap. 15. § 4. and vol. ii. lib. 3. cap. 1. § 4.

"About the commencement of the 18th century,

ury, and thence forward, the occult sciences, as they are termed, had declined very considerably in the estimation of the learned; and those who treated of physiognomy forbore to disgrace it by connection with those branches of ideal learning with which formerly it had been invariably conjoined. In Britain, Dr Gwyther noticed it with approbation.—His remarks are published in the *Philos. Transf.* vol. xviii.; and Dr Parsons chose it for the subject of the Croonian lectures, published the first in the 3d supplement to the 44th vol. of the *Philos. Transactions*, and afterwards (1747) in a separate treatise, entitled *Human Physiognomy explained*.

"The observations, however, of these writers, as well as of Lancelius, Haller, and Buffon, relate rather to the transient expression of the passions than to the permanent features of the face and body. The well-known characters of Le Brun, likewise, are illustrative of the transient physiognomy, or as it is termed) *pathognomy*."—See his description of the PASSIONS, under DRAWING, *Sett. X.* and XI; and his figures on *Plates CXIX.* and *CXX.*

"During the 18th century, (continues Mr MOLLISON,) although physiognomy has been now and then attended to, nothing of importance appeared on the subject till the publication of the great work of M. LAVATER, dean of Zurich, which has excited no inconsiderable portion of attention in the literary world. The author professes not to give a complete synthetical treatise on physiognomy, but, aware that the science is yet in its infancy, he exhibits fragments only illustrative of its different parts. His performance is no doubt desultory and unconnected. It contains, however, many particulars much superior to any thing that had ever before appeared on the subject. From this work we shall conclude our short article, by quoting part of the author's defence of his favourite science.

"No study, says he, excepting mathematics, more justly deserves to be termed a science than physiognomy. It is a department of physics, including theology and belles lettres, and, in the same manner with these sciences, may be reduced to rule. It may acquire a fixed and appropriate character; it may be communicated and taught.

"Truth or knowledge, explained by fixed principles, becomes science. Words, lines, rules, definitions, are the medium of communication. The question, then, with respect to physiognomy, will thus be fairly stated. Can the striking and marked differences which are visible between one human face, one human form, and another, be explained, not by obscure and confused conceptions, but by certain characters, signs, and expressions? Are these signs capable of communicating the vigour or imbecility, the sickness or health, of the body; the wisdom, the folly, the magnanimity, the meanness, the virtue, or the vice, of the mind?

"It is only to a certain extent, that even the experimental philosopher can pursue his researches. The active and vigorous mind, employed in such studies, will often form conceptions which he shall be incapable of expressing in words, so as to communicate his ideas to the feeble mind, which was itself unable to make the discovery: but the lofty, the exalted mind, which soars beyond all

written rule, which possesses feelings and energies reducible to no law, must be pronounced scientific.

"It will be admitted, then, that to a certain degree physiognomical truth may, as a science, be defined and communicated. Of the truth of the science there cannot exist a doubt. Every countenance, every form, every created existence, is individually distinct, as well as different, in respect of class, race, and kind. No one being in nature is precisely similar to another. This proposition, in so far as regards man, is the foundation stone of physiognomy. There may exist an intimate analogy, a striking similarity, between two men, yet being brought together, and accurately compared, they will appear to be remarkably different. No two minds perfectly resemble each other. Now, is it possible to doubt that there must be a certain native analogy between the external varieties of countenance and form, and the internal varieties of the mind? By anger the muscles are rendered protuberant: Are not, then, the angry mind, and the protuberant muscles, as cause and effect? The man of acute wit has frequently a quick and lively eye. Is it possible to resist the conclusion, that between such a mind and such a countenance there is a determinate relation?

"Every thing in nature is estimated by its physiognomy; that is, its external appearance. The trader judges by the colour, the fineness, the exterior, the *physiognomy* of every article of traffic: and he at once decides that the buyer "has an honest look," or "a pleasing or forbidding countenance."

"That knowledge and science are detrimental to man, that a state of rudeness and ignorance are preferable and productive of more happiness, are tenets now deservedly exploded. They do not merit serious opposition. The extension and increase of knowledge, then, is an object of importance to man: and what object can be so important as the knowledge of man himself? If knowledge can influence his happiness, the knowledge of himself must influence it the most. This useful knowledge is the peculiar province of the science of physiognomy. To conceive a just idea of the advantages of physiognomy, let us for a moment suppose that all physiognomical knowledge were totally forgotten among men; what confusion, what uncertainty, what numberless mistakes, would be the consequence? Men destined to live in society must hold mutual intercourse. The knowledge of man imparts to this intercourse its spirit, its pleasures, its advantages.

"PHYSIOGNOMY is a source of pure and exalted mental gratification. It affords a new view of the perfection of Deity; it displays a new scene of harmony and beauty in his works; it reveals internal motives, which without it would only have been discovered in the world to come. The physiognomist distinguishes accurately the permanent from the habitual, the habitual from the accidental, in character. Difficulties, no doubt, attend the study of this science. The most minute shades, scarcely discernible to the unexperienced eye, denote often total opposition of character. A small inflexion, diminution, lengthening or sharpening, even though but of a hair's breadth, may

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alter in an astonishing degree the expression of countenance and character. How difficult then, how impossible indeed, must this variety of the same countenance render precision? The feat of character is often so hidden, so masked, that it can only be detected in certain, perhaps uncommon, positions of countenance. These positions may be so quickly changed, the signs may so instantaneously disappear, and their impression on the mind of the observer may be so slight, or these distinguishing traits themselves so difficult to seize, that it shall be impossible to paint them or describe them in language. Innumerable great and small accidents, whether physical or moral, various incidents and passions, the diversity of dress, of position, of light or shade, tend to display the countenance often in so disadvantageous a point of view, that the physiognomist is betrayed into an erroneous judgment of the true qualities of the countenance and character. Such causes often

occasion him to overlook the essential traits of character, and to form a decision on what is purely accidental.—How surprisingly, for instance, may the small-pox disfigure the countenance, and destroy or confound, or render imperceptible, traits otherwise the most decisive?"

That there is, upon the whole, some truth in physiognomy cannot be denied. Every man's feelings direct him in a manner to practise it, at least *tacitly*, in a certain degree, upon the first sight of a stranger, especially if there be any thing either strikingly agreeable or the opposite in his features.—But should we attempt to act by the rules of this science, in our general intercourse with mankind, we would be often grossly deceived; and still more, were we to decide on a man's intellectual powers by the rules of this science. In this last respect, it is affirmed, that LAVATER himself has fallen into very great mistakes, notwithstanding his long practice in the art.

P H Y

PHYSIOLOGER, *n. f.* [from *physiology*.] One skilled in physiology. *Ash.*

* **PHYSIOLOGICAL**, *adj.* [from *physiology*.] Relating to the doctrine of the natural constitu-

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tion of things.—Some of them seem rather metaphysical than *physiological* notions. *Boyle.*

* **PHYSIOLOGIST**, *n. f.* [from *physiology*.] One versed in physiology; a writer of natural philosophy.

P H Y S I O L O G Y.

DEFINITIONS and DIVISION of PHYSIOLOGY.

PHYSIOLOGY is thus defined by Dr JOHNSON:

* **PHYSIOLOGY**, *n. f.* [*γενεσις*, and *λογος*; *physiologie*, Fr.] The doctrine of the constitution of the works of nature.—Disputing physiology is of no accommodation to your designs.—The conceptions of mankind could not be accounted for from their *physiology*. *Bentley.*

"**PHYSIOLOGY**," (says the ingenious Dr JOHN BARCLAY, lecturer on anatomy at Edinburgh,) "is a Greek word, which, in strict etymology, signifies that which discourses of nature: but in its common use, it is restricted to that branch of physical science which treats of the different functions and properties of living bodies; while by living bodies are meant those which are by a certain organized structure enabled to grow, and propagate their kind."

"By this definition, physiology must necessarily have for its object the explanation of that internal organical economy in plants and animals, which nature has devised for the preservation of the individual, and for the continuance and propagation of the species."

"It is naturally divided into two kinds, particular and general. The former treats of the properties and functions of the individual or species, as may be seen in the article ANATOMY; the latter is the subject of our present article, and treats of those functions and properties which are general or common to all living bodies."

"But of all the branches of physical science, physiology certainly makes the nearest approach

to the region of metaphysics; but yet there is a difference between, though it may not be very easy to point out the precise line of termination. Physiology, as already defined, is that science which has for its object the organical economy of living bodies. But, wherever the economy of living bodies indicates design, and cannot result from any combination or structure of organs, it must be supposed the effect of something different from matter, and whose explanation belongs to that which is called *metaphysics*, or which we might term the *philosophy of mind*."

INTRODUCTION.

PHYSIOLOGY was long disfigured by whimsical reveries, and numerous hypotheses were formed without any data. BELLINI of Florence, disgusted with these absurdities, first applied *mathematics* to the study of the science. BORELLI, BOERHAAVE, and PITCAIRN adopted similar methods. The former considered the muscles as ropes, and the bones as levers, and explained the interior motions of the animal economy on the principles of mechanism; while the latter held geometrical demonstration to be the only species of evidence, excepting the senses, that could be relied on. The mechanic physiology has now sunk into such contempt, that the most illiterate affect to smile at the mention of its name; but let it not be forgotten, that it explained the structure of the eye, the movement of the bone, and force of the muscle, and that it may yet perhaps be the means of many interesting discoveries in the living body. Chemistry now, in physiological investigations, holds that place which was formerly possessed by geometry

geometry and mechanics. Nor is CHEMISTRY undeserving of this rank. By the knowledge chemists have acquired of salts and of gases, by their more ingenious modes of analysis, and by some discoveries made concerning the nature of heat and of light, chemistry is now able to account for many phenomena that before were inexplicable.

It is more than a century since it was observed, that plants were nourished by pure water and atmospheric air: that from these alone they derived their extracts, their mucilage, their oil, their coal, their acids, their alkalis, and aroma: But since the discovery of different kinds of elastic fluids, it has been farther remarked, that they grow rapidly in hydrogenous gas, and in air mixed with carbonic acid; that assisted by light their leaves absorb hydrogen from water, carbon from the acid of which they are so fond; and, thus decomposing the one and the other, disengage from both the oxygenous principle, or vital air, and restore to the atmosphere salubrity and health.

Leaving vegetables, which, by analysis in close vessels and in red hot pipes, it has reduced to hydrogen, oxygen, azot, and charcoal, it has made discoveries no less important in the animal kingdom. It has found that the food of the nobler animals, which immediately or remotely is prepared by vegetables, is generally acted upon by a solvent: it has proved by experiment, that the animal organs can fix azot; can decompose atmospheric air; can form lime, iron, and carbonic acid, as well as vegetables, produce a number of saline substances, which no art could detect in their food. Nor is here that such discoveries are meant to terminate; these seemingly creative powers of vegetation and of animalization, with other phenomena in the structure and economy of living bodies, chemistry imagines that it will yet be able to explain. We may safely venture, however, to predict, that something more than its present knowledge of the various effect of heat and of mixture will in this case be found necessary to ensure success. The discovery of elastic fluids, and their singular properties affords the strongest reason to suspect that we yet may be ignorant of many agents which nature employs in the functions of bodies. But whatever be the truth, we are almost certain that these agents discovered by the chemist are not alone concerned. Electricity, magnetism, and animal electricity, must not be excluded from acting some part. The growth of plants; it is well known, is considerably affected by the electrical state of the atmosphere; it is sensibly promoted by a proper use of the *vegeto-electrometer*, (or *electro-vegeto-meter*, see ELECTRICITY, *Index*.) and has been said to indicate a difference between the negative and positive electricities, whether these be kinds or states in the fluid. Such too is our present knowledge, that electricity as yet seems the only cause to which we can ascribe the seeming chemical affinities of the dew; its constant practice in avoiding some bodies, its predilection for others, and particularly its attachment to the living points of plants and of leaves; nor is this electricity wholly unconnected with the animal

kingdom; when we think of its singular fondness for points, it occurs that one intention of our hairs may probably have been to collect and diffuse it. It is plainly excited in crows rubbing the hair of some animals; and when we wear silk, it is frequently accumulated upon the surface of our own bodies.

The iron found in plants and in animals is certainly somewhat of a striking circumstance, and cannot be denied to be one reason why magnetism should not be wholly overlooked.

As for ANIMAL ELECTRICITY, or what has been called *so*, it is now, we believe, generally allowed to hold an important place in the system. It is very perceptible in all those nerves which are subservient to voluntary motions; nor is it limited to these alone. In several instances where metals were applied to the nerves of the heart, which nature has destined to spontaneous motions, they were seen to awaken the dormant powers in the muscular fibres of that viscous. We here speak only of the nerves; but the *Torpedo*, the *Gymnotus electricus*, and *Silurus electricus*, possess a particular structure of organs for collecting this fluid, for discharging it at pleasure, and for giving a shock. If those who are accustomed to the common kind of electrical experiments may at first be surprised that this electric fluid in the animal is not discharged from the nerves by water, or any other metallic conductor that is pure and unmixed, another fact, which is fully as striking, though it has not been hitherto mentioned by any observer known to us, appears to merit equal attention: Cut away the leg of a frog, uncover a part of the crural nerve, place the limb now on a table on which an electrifying machine is working, you will see the muscles strongly convulsed at every spark which you draw from the conductor, but remaining motionless upon the discharge of the *Leyden phial*. See *Plate CXXXIV. Fig. 16. and 17.*

Here it may be expected that we should take notice of ANIMAL MAGNETISM, as a discovery in physiology nearly allied to ANIMAL ELECTRICITY; but this pretended discovery having been decided to have been a deliberate imposition upon mankind, we need only refer the reader for an account of its history and detection, (to the utter confusion of its author MESMER, and his pupil DESLON,) to our article, MAGNETISM, ANIMAL.

The aid (continues our ingenious author, which anatomy affords to physiology, is now to be considered. Physiology in general and the study of anatomy are so closely connected, that, as HALLER imagined, they can hardly be separated even in idea.

"The anatomist has observed, that all motion proceeds immediately from the muscular fibre; that the muscular fibre again derives its power from the nerve, which terminates in the brain; that fibre and nerve, and the whole system, are nourished by the blood which comes from the heart; and that the waste of blood is supplied by the lacteals, which absorb nutritious matter from the food, as it passes along the intestinal canal. He has also observed, that the blood, which is in continual motion, has a circular course; that other vessels along with the lacteals

teals are employed to absorb; and by means of injection has shown the route of the different fluids as clearly in the dead as they could have been seen in the living subject. Aided by the microscope, he has discovered the red globules of the blood, animalculæ in the semen, and the anastomoses of the arteries and veins; and when the microscope could lead him no farther, he has had recourse to chemical analysis, and made discoveries equally important, in demonstrating the bodies which compose the several fluids and the solids.

A TABLE of the FUNCTIONS or PROPERTIES of LIVING BODIES, altered from M. D'AZAR.

1. DIGESTION. 2. NUTRITION. 3. CIRCULATION. 4. RESPIRATION. 5. SECRETION. 6. OSSIFICATION. 7. GENERATION. 8. IRRITABILITY. 9. SENSIBILITY.

Every body, in which one or more of these functions are observed, is to be considered as possessing organization and life.

I. DIGESTION. 1. Living bodies which have one or more stomachs easily distinguished from the œsophagus and intestinal canal:—Man. Quadrupeds. Cetaceous animals. Birds. Crustaceous animals. 2. Living bodies which have a stomach distinguishable only by certain expansions from the œsophagus and intestinal canal:—Oviparous quadrupeds. Serpents. Cartilaginous fishes. Fishes properly so called. 3. Living bodies which have an alimentary canal, not distinguishable into œsophagus, stomach, and intestines:—Insects. Worms. Zoophytes. 4. Living bodies which have neither stomach nor intestines:—Plants.

II. NUTRITION. 1. Living bodies whose nutritious juices are absorbed by vessels beginning from internal cavities:—Man. Quadrupeds. Cetaceous animals. Birds. Oviparous quadrupeds. Serpents. Cartilaginous fishes. Fishes properly so called. Insects. Crustaceous animals. Worms. 2. Living bodies whose nutritious juices are absorbed by vessels opening upon the external surface:—Plants.

III. CIRCULATION. 1. Living bodies with blood, having a heart with a ventricle and 2 auricles:—Man. Quadrupeds. Cetaceous animals. Birds. 2. Living bodies with blood, with one ventricle divided into several cavities, and two auricles:—Oviparous quadrupeds. Serpents. 3. Living bodies with blood, with one ventricle and one auricle:—Cartilaginous fishes. Fishes properly so called. ii. Living bodies with a whitish fluid; whose heart is formed of one longitudinal vessel, tubercular and contractile, in which there is a whitish fluid instead of blood:—Crustaceous animals. Insects. Worms. In some crustaceous animals there is observed something resembling a heart. iii. Living bodies with juices, in which no heart has yet been observed, but only vessels filled with juices of a nature different from that of blood. Zoophytes. Plants.

IV. RESPIRATION. i. Living bodies which respire, 1. By lungs free from all adhesion and spongy:—Man. Quadrupeds. Cetaceous animals. 2. By lungs free from all adhesion, vesicular and muscular:—Oviparous quadrupeds. Ser-

pents. 3. By lungs adhering to the ribs, and provided with appendages:—Birds. 4. By gills of different forms:—Cartilaginous fishes. Fishes properly so called. Crustaceous animals. 5. By stigmata or holes in different rings:—Insects. Earth worms. 6. By an opening called tracheæ, or by external fringes:—Aquatic worms. 7. By tracheæ:—Plants. ii. Living bodies in which there have been discovered neither stigmata nor tracheæ:—Polypes.

V. SECRETION. Living bodies. There are no bodies in which secretions are not carried on.

VI. OSSIFICATION. i. Living bodies, whose skeleton is, 1. Internal and osseous:—Man. Quadrupeds. Cetaceous animals. Birds. Oviparous quadrupeds. Serpents. Fishes properly so called. 2. Internal and cartilaginous:—Cartilaginous fishes. 3. External and corneous:—Perfect insects. Lithophytes. 4. External and cartaceous:—Crustaceous animals. Shell fish. Madrepores. The greatest part of zoophytes. 5. External and ligneous:—Plants. ii. Living bodies which have no skeleton:—Insects in their first state. Worms. Polypes.

VII. GENERATION. i. Living bodies, which are, 1. Viviparous:—Man. Quadrupeds. Cetaceous animals. 2. Oviparous, whether the evolution of the eggs takes place within or without the female:—Birds. Oviparous quadrupeds. Serpents. Cartilaginous fishes. Fishes properly so called. Insects. Crustaceous animals. Worms. Plants. ii. Living bodies which propagate by slips:—Worms. Polypes. Plants.

VIII. IRRITABILITY. 1. Living bodies which have a body muscular or contractile:—Greatest part of insects in the first state of their transformation. Worms. Polypes. 2. Living bodies which have muscles covering the skeleton:—Man. Quadrupeds. Cetaceous animals. Birds. Oviparous quadrupeds. Serpents. Cartilaginous fishes. Fishes properly so called. 3. Living bodies which have a skeleton covering the muscles:—Perfect insects. Crustaceous animals. 4. Living bodies, which have no muscular power; no spontaneous movements:—Plants.

IX. SENSIBILITY. 1. Living bodies, which have nerves and brain easily distinguishable from the spinal marrow:—Man. Quadrupeds. Cetaceous animals. Birds. Oviparous quadrupeds. Serpents. Cartilaginous fishes. Fishes properly so called. 2. Living bodies, which have nerves and brain scarcely distinguishable from the spinal marrow:—Insects. Crustaceous animals. Worms. 3. Living bodies, in which there have not yet been discovered nerves or brain, or spinal marrow:—Zoophytes. Plants.

The above table, which has its divisions marked by the functions, and their kinds and varieties by the kinds and varieties of those organs by which they are performed, differs considerably from a zoological. Borrowing its several marks of distinction from internal characters, it more clearly demonstrates the difference between the mineral, vegetable, and animal, than any system that attempts to arrange by outward appearances.

No minerals, whatever be their forms, or the regularity and beauty of their figures, were ever said to possess any thing like organs of nutrition: and

and however frequently some may recover their soft shapes, they are never supposed either to produce, or assist in producing, their own kind by generative powers. And no plant, however much may be said of animals that want a nervous system and a heart, and are fixed, without the power of loco-motion, to one place; we say, no plants, though some may represent a few of the simpler effects of sensation, and others may be seen to float through the ocean, were ever said to discover any signs of voracity, to possess any thing resembling a stomach, to distend their body by swelling their food, to apply their food to the mouths of absorbents opening internally; and, when the nutritious juices were extracted, to eject it *in cumulo*. It has been said that zoophytes present similar phenomena. One half of their name would imply that they are animals, and another half would insinuate that they are plants. D'Aubenton reasons with clearness on this subject. True, says he, the greatest part of them are branched like plants, and like plants are composed of concentric circles. Some have a soft exterior substance which is called bark, and a hard interior which is called wood. Along their branches, and at their extremities, they put forth vesicles which resemble buds; and when a part falls from the whole, it is sufficient, like a vegetable slip, to produce a zoophyte; but do these appearances prove that they are plants?

After thus endeavouring to point out the boundaries between the mineral, the plant, and the animal, we now venture on a rude sketch of the order and manner in which these properties may be explained, and in which the facts in general physiology may be afterwards arranged.

Without blaming the arrangement of D'Azyr, whose genius and labours we respect, we have been induced to adopt the following, from those reasons with which the reader is now to be acquainted.

Attending minutely to a living body, which already has escaped from the seed, the egg, or membranes of the parent, which is wholly disengaged from the placenta, and depends for the future on the operations of its own organs, we may observe, that, in order to live, it must be allowed the free use of air, as applied by the organs of—*Respiration*.

That, in order to grow, it must have likewise a supply of food, which is a substance somehow adapted to its constitution; and which, on being received into the system, is Prepared by—*Digestion*, Taken up by—*Absorption*, Distributed by—*Circulation*, Assimilated by—*Nutrition*, And the whole carried on by means of—*Secretion*.

We next may observe, that to enjoy the free exercise of these functions, it must be secured from the more common and external injuries of its situation; and that this is done by certain integuments originally produced, and, when it is necessary, afterwards renewed by that function; which, till we receive a new nomenclature, we shall venture to call by what may be rather an uncouth word—*Integumentation*.

We again perceive, that these functions are all dependent on a general principle—*Irritability*; By which the system is rendered, by stimulants,

susceptible of—*Motion*; Accommodates itself to different circumstances by means of—*Habit*; Alters its shape by successive—*Transformation*; Produces the species by—*Generation*;

And when the business of life is finished, is, after many a languid affection from the influence of—*Sleep*; At last subjected to the general fate of all living bodies—*Death*.

These we imagine are the general properties of living bodies; and such is the order in which we are now to take a short and cursory view of them.

SECT. I. Of RESPIRATION.

RESPIRATION is that function by which air is brought into the system, and by which it is prepared in particular organs, that in some respect succeed the placenta in the general economy. For, as any interruption of the usual intercourse between the placenta and fœtus in ovo proves soon fatal; so, when that communication naturally ceases, and the new one succeeds between the lungs and external air, it is likewise found, that any preternatural interruption of this last is in all living bodies presently attended with various symptoms of increasing languor, and in many with an almost instantaneous death.

So essential is respiration to the system, that snails, chameleons, and some other animals, can live for years upon air alone. We have seen a chameleon that lived and was vigorous for 22 months without any food, and which might have continued to live much longer but for an unfortunate bruise by a fall.

Other phenomena equally demonstrate the importance of air to the living body. The frog leaps away wanting its heart; it survives the loss of the greatest part of its spinal marrow. Without its head, it lives for some days, and its heart continues to circulate its blood. Spallanzani took one from the back of a female, cut off his head, and, after performing this whimsical experiment, saw the gallant return to his mistress, grasp her in his arms, and finish the task which he had begun. And Borelli found, that eels and serpents, though their bodies be opened, and the whole of their viscera be taken out, are able to move for a day after; and yet, notwithstanding, in all these animals, the life is observed to be suddenly extinguished when the all-vivifying air is excluded. Even the smallest insect has died, and the plant lost its vegetative power, when retained for any while in a vacuum. The fish itself, when placed under the exhausted receiver, has started anxiously to the surface of the water in quest of fresh air; and, finding none, has sunk to the bottom, and expired in convulsions.

To this general dependence of life upon respiration there occur but few things like an exception; there are, some serpents and worms, and crustaceous animals, found alive in the hearts of stones, some insects that were found in wood, and a number of toads which in different places have been taken from the hearts of trees and of rocks, where they left an impression, and where they were supposed, in some cases, to have lived for centuries without air. These facts, real or pretended, have been the cause of much speculation.

Some

Some philosophers doubt the facts; others, receiving the facts as sufficiently authenticated, have studied how to account for them by various hypotheses.

Experiments must tell what are the limits which nature has here prescribed to herself. New eggs, when covered with varnish, or placed under the exhausted receiver, are secured against the attacks of corruption. Bomare, in his Dictionary, has mentioned three, which, protected from air, were found fresh in the wall of a church, after a period of 300 years. And if it be true that a snake found in a block of marble died as soon as exposed to the air, or if the parts in contact with air be the only ones which in torpid animals appear to be changed, it would seem probable that a total exclusion of this varying and active element would tend more to the preservation of torpid animals, in certain instances, than free admission, which, in those cases where all vital functions have ceased, is regularly found a principal agent in their dissolution.

M. Herissant, of the French Academy, was the first philosopher, who, by means of experiment, thought of interrogating Nature herself upon this subject. On the 21st of February 1771, he, with great accuracy, shut up three toads from the air, two of which were taken out alive on the 8th of April 1774. D'Aubenton says, after a period of 18 months; but in this instance we depend more on the friend of Fontana, who has mentioned the dates. The two toads were again inclosed, and Herissant died before there was a second inspection. D'Aubenton says, that when taken out, their bodies were hard and shrivelled, and their whole moisture totally absorbed. A fourth toad that had been inclosed was heard to croak whenever the box in which it was confined happened to be shaken. Since that period the practice is common of confining snails in a sealed phial, where they exist in torpor for years.

These phenomena still excite wonder; but to wonder less and examine more, would sooner procure us that information which we are wanting.

Leaving, therefore, the torpid state as one of those subjects with which we at present are little acquainted, and of which we therefore cannot speak with certainty in the general abstract language of science; it will naturally be asked, In what respect is air so necessary to all living bodies in their active state, and how contributes it to the regular performance of the different functions?

The moderns, who, after all their researches, have been unable to discover this vital spark of the ancients, are more puzzled to assign an adequate cause for the heat than for any cold which they discover.

Of animal heat, the most rational theory, we think, properly belongs to the 17th century; it is confirmed by modern discoveries, and has ascribed this heat to respiration. Many had observed, that those animals which respire most, have the warmest blood. Lower demonstrated, that this blood received a new and a brighter colour in passing through the lungs. Verheyen and Borelli both proved, that the air lost something by coming in contact with that organ. Mayow showed, that this something which the air loses is contained in

nitre. Experience taught the workers in nitre, that this something was absorbed from the air; and Verheyen remarked, that it is also absorbed by the lungs, and is probably that which maintains combustion; which qualifies the air for giving support to animal life, and imparts to the blood the vermilion colour.

How well the whole of this reasoning was founded, is proved by the late discoveries of Priestley and other chemists. There is now obtained, in a separate state, an aerial fluid, which maintains both life and combustion, and gives a vermilion colour to the blood. It is extracted in a very large quantity from nitre; is one of the component parts of the atmosphere, and the vital principle of that element; without which, in most animals, life is extinguished. It was called dephlogisticated air by Priestley, the first discoverer; as the great acidifying cause in nature, the French nomenclature has given it the name of *oxygenous gas*; and, as one of the causes on which the existence both of fire and of life depends, it is named *empyreal or vital air*.

Late discoveries have shown farther, how this air may in respiration produce heat. From the most accurate investigations, it appears, that caloric, or the principle of heat, is a distinct substance in nature; that it combines with different bodies in different degrees; that it is the cause of fluidity in all; and that, in proportion to that capacity which they have for it, and to that distance at which they are removed from the fluid state, the more or less caloric they contain. Aeriform bodies being all, therefore, exceedingly fluid, it must be evident, that when they are fixed or condensed in the blood, and made to approach nearer solidity, a quantity of heat must be evolved. A part of this is very plainly evolved in the lungs where the air is absorbed, as appears by the breath; and a part evolved by the action of vessels, as appears from nearly an equal heat over the system, from the partial heat of a morbid part, and the sudden transition from heat to cold, and from cold to heat, over the surface, when the vessels are affected by either internal or external stimuli. When the heat, thus evolved by the gradual fixation of that body with which it was combined has been successful in making its escape by the lungs and integuments, the blood returns in a dark and a sluggish stream by the veins, and mingles again with the genial fluid, which before gave it spring, activity, and life.

Of that oxygen which remains in the system, part is employed in forming different saline combinations and supplying the waste occasioned by that constant reabsorption, which, from many experiments that have been made with solutions of matter, is known to take place in the solid bones. The use of that oxygenous gas which returns with the breath is best understood after knowing its affinities. Its basis oxygen, combining with hydrogen, which is the basis of inflammable air, forms water; and, combining with carbon, the carbonic acid. It carries, therefore, back with the breath a part of the carbon, produced by the slight combustion of the blood, and a quantity of hydrogen arising from the watery fluid decomposed.

But

But oxygenous gas does not alone enter the lungs. Of 100 parts of the atmosphere, but 28 are oxygenous gas, 180 is carbonic acid, and 72 are azotic gas. These last, though intended chiefly for other beings different from man, which are in immense numbers on the globe, but which, like him and the nobler animals, are not formed to breathe the empyreal air, must, notwithstanding, be of some important and essential use to all living bodies. It has accordingly been found by experiment, that pure and unmixed oxygenous gas cannot be breathed for any very considerable time without danger; that some azot is contained in the blood, and has been extracted from the muscular fibre, when properly treated with the nitric acid. According to Berthollet, five of its parts with one of hydrogen form ammonia or volatile alkali; which dissolves the glandular tumours of the body, and prevents the coagulation of blood, and the thickening of mucus which arise from acids. The azotic gas may therefore in part unite with hydrogen, may prevent the coagulation of serum, the catarrhus formation of viscid mucus, and many combinations that oxygen might form, injurious to the system. The carbonic acid, which is $\frac{1}{100}$ of carbon, and $\frac{1}{100}$ of oxygen, may also be necessary in regulating the effects of the other two. In aerated water, its uses are very generally known: it allays the pain of the urinary bladder when excited by calculus; it has been employed in the cure of wounds, and been thought useful in the pulmonary phthisis. It is generated in the lungs of those animals which respire oxygen. In small proportions, it favours the growth of the vegetable tribes. These readily decompose it; and, with the addition of other prepared oxygen from water, restore what is pure to the general mass of the vital fluid, that plants and animals may thus live by the mutual performance of kind offices.

Every theory that pretends to account for ANIMAL HEAT ought also to account for that singular equality of heat which the system preserves, or endeavours to preserve, in different temperatures. The ingenious Dr Barclay explains it simply in the following manner, from the above theory:

"Venous blood, if exposed to the air, is known to absorb a portion of oxygen, and assume that colour which it has in the pulmonary veins and aorta. Suppose an absorption of a similar kind taking place in the lungs, a fact which may be proved by decisive experiments; it is plain that the oxygen by this absorption must recede from its gaseous or fluid state; that a quantity of heat must be therefore evolved, which, along with the heat of the resistent blood, is carried away by that vapour which issues from the lungs. In the course of circulation, the oxygen will naturally incline with the hydrogen to form water; it will tend likewise to the formation of many other compounds; and, as it enters into new states, and is farther removed from gaseous fluidity, it must still be giving out a portion of heat. If the surrounding temperature be cold, this separation will be easily effected. The caloric will, in that case, be greedily absorbed from the interior surface of the lungs and exterior surface of the whole

body. The oxygen, meeting with the necessary temperature, will readily pass into new forms; and the venous blood, returning to the lungs, will demand a supply which will be either greater or less according as the cold, by favouring the escape of the caloric, and promoting new combinations with oxygen, had removed it from the point of usual saturation.

"The gradual evolution of heat is a proof that the temperature must be sometimes reduced, before the oxygen can properly enter into all the usual combinations of the system. Suppose the body then to be placed within a hot circumambient atmosphere; this atmosphere, if warmer than the animal, will be more apt to part with heat than to receive it; and the oxygen absorbed, being thus unable to dispose of its caloric, will be prevented from passing into those combinations and forms where heat is evolved. The venous blood will therefore conduct it back to the lungs, and make a demand for a new supply; but proportionally less according as the hot circumambient air, by preventing the escape of the caloric, and the usually facility of new combinations, has confined its removal to a smaller distance from the point of saturation.

"In this last case the thing principally entitled to notice, is a very curious effort of nature to resist the growing increase of heat. In the warm atmosphere, as during violent muscular exertion, the exhaling vapour is commonly discharged in a greater quantity from the surface of the body; and consequently the heat furnished with an excellent temporary conductor, that in some measure counteracts the dangerous effects from without."

But all living bodies are not supported by the same kind of aerial food. Oxygenous gas has indeed been honoured with the flattering appellation of *vital air*; and nitrogenous gas been usually distinguished by that degrading epithet *azotic*; a word which signifies *destructive of life*. But though man, and all the warm-blooded animals that have yet been examined, may die in respiring the nitrogenous gas, this gas however, which constitutes more than two thirds of the whole atmosphere, may in general be called the vital air of the vegetable tribes, and of not a few of the orders of insects which thrive and live in it. For while man, and others which respire as he does, emit both the hydrogen and carbon, and return the nitrogen not sensibly diminished; most vegetables and many insects eagerly inhale them, and emit oxygen as noxious or useless. These effects are the indications of a radical difference in constitution. Even the fibres of those living bodies which exhale oxygen, will, after death, attract it so powerfully, as to decompose the nitric acid; but those bodies which inhale nitrogen, have so very weak an affinity to oxygen, and so strong a one to some of the bodies with which it is combined, that they can easily decompose water and carbonated air.

What fishes respire is not ascertained. Neither the change of the air, nor of the water which they occasion when in close vessels, have, so far as we know, been fully examined. Chaptal is assured, that, like other animals, they are sensible of the action of all gases. Fourcroy says, that they

they do not generate the carbonic acid, and that the air which Priestley and he found in the air vessels of carp was nitrogene gas. Their thermometrical heat is so low, that in D'Aubenton's table they are reckoned among the cold blooded animals. The temperature of plants is still lower. The heat of a tree which the very ingenious Dr Hunter examined, though several degrees above that of the atmosphere when below the 56th division of Fahrenheit, was always several degrees below it when the weather was warm. When taken out, the sap was observed to freeze at 32° , while in the tree it would not freeze below 47° . The very profuse perspiration of vegetables greatly moderates the heat in their surface; and as air which absorbs moisture expands, and becomes thereby specifically lighter, there is a regular current produced, and evaporation rapidly promoted by the dense air displacing the rarefied.

The heat which is developed in all living bodies, is proportioned to the quantity of matter which is by means of the vital powers reduced to a state more nearly approaching solidity; to the kinds of the substances which are reduced, and to the degrees and kinds of the reduction. In all living bodies there are certain degrees of heat, peculiarly fitted for carrying on their various economical operations. What these are, in the different kinds of plants and animals, is not known. The bear, the hedge-hog, the dormouse, and the bat, may probably not digest when reduced to 70° , 75° , or 80° . The frog, however, will digest at 60° ; and the birch before it arrives at 47° . Respiration, besides imparting aerial food, seems intended to regulate those different degrees of heat. It raises the heat after a meal; it suffers it to fall in the time of sleep; it withdraws the supply when the atmosphere is warm, and increases it again when cold. Therefore heat merely is not the object solely aimed at in respiration. All living bodies have their congenial degrees of heat. The regulation of these is important: on the one side, it prevents the dissipation, on the other, the coagulation, of their fluids; it preserves the living power of their organs; and, by a natural and proper temperature, assists their action in mixing, composing, decomposing, and preparing the different parts for secretion, excretion, absorption, reabsorption, and assimilation. But the whole of the heat is not evolved in the lungs, nor the whole that is evolved disengaged from air. And the whole of the air does not enter by the lungs; much is contained in the liquid and solid parts of the food. It is extricated often in the process of digestion; and, when the organs are vigorous and healthy, is made subservient to the general economy. If the organs, however, should happen to be languid, it scorns their authority, which cannot be enforced; from being friendly, it soon becomes inimical to the system, and threatening danger, accumulates not only in the stomach and intestines, but in other cavities. It has been found in the cellular membrane; in certain vesicles formed for itself; in the uterus, in an abscess; and in gunshot wounds: it has sometimes burst from the vagina with a fort of noise. And in a nephritic complaint of a horse, it has been found flowing in a stream from what the farriers call the *fistula*.

We have now to inquire, what are the kinds of respiratory organs, and in what manner their functions are performed? The preceding table has in some measure made us acquainted with this subject. Some animals breathe by a trachea and lungs; insects, by either stigmata, or tracheæ, opening into air-vessels; plants, by air-vessels and leaves; fishes, and numbers of the watery element, if they do not breathe, at least receive air by their gills: the fœtus in ovo, the polypus tribe, and many more organized bodies, by the same organs which convey their food. The absorbents appear to be the first and most general way by which living bodies are supplied with air: the mouths of these vessels are like small tubercles; scattered over the body of the insect while wrapt in its membrane. In the horse and the bird they are blood-vessels spreading on a membrane, and deriving nourishment from the uterus or egg, that had been itself nourished by absorbents. In a cow, they are vessels which, spreading on a membrane, terminate in glands; these glands being opposite to others which adhere to the uterus; and the membranous and uterine glands, when in contact, inclosing a third gland like a kernel. In man, they are vessels spreading on a membrane, and entering a large glandular body called the *placenta*. In the mouse and the hare, they are likewise vessels branching on a membrane and entering a placenta; this placenta, when fixed, receives large veins from the parent, and which may be either inflated or injected from the cavity of the uterus.

What are properly respiratory organs exercise not their function till circulation and nutrition are begun. Not only are the respiratory organs thus late in exercising their functions; in many vegetables a great part of them is annually renewed, and laid aside in the torpid state. In those insects which undergo the most remarkable kinds of transformation they suffer a change; and in all those animals which spend their earlier days in the water, and afterwards come to live in the air, they are altered in kind. In all living bodies the proper function of one part of the respiratory organs is, to secrete from the water or air that particular aeriform fluid which mingles with their juices, and which is necessary to life and nutrition. In many cases these organs are placed externally, and are always in contact with the air or water from which they secrete. In other cases they are lodged internally; and air or water are then alternately admitted and expelled by varieties of organs which serve as auxiliaries.

Vegetables secrete their aeriform fluid from water and air. They receive air along with the liquids of their absorbents, which open on the roots, the trunk, and the branches, and upon the inferior surfaces of leaves; or, if nature has plunged these leaves under water, the absorbents open and imbibe their fluids on both sides. In many, however, the upper surface of the leaf is intended to inhale air. As it is proved by Ingenhousz and others, that the respiration of many leaves is assisted by light, we see a reason why plants growing in a dark room turn to the place where light is admitted; why the flowers and the leaves of many plants follow the diurnal course of the sun;

why

why the branches of trees, which require much light, die when placed in a thick shade; why moonshine in autumn contributes so much to the opening of grain; and why leaves and branches are arranged in such a manner as least to intercept that quantity of light which nature has allotted to the genus of each.

The air-vessels in the body of plants, are those vessels which contain juices but at certain times, and which, during the greatest part of the season, are filled with air. This air is collected from the tip of the roots as it passes along the diametral sections, and from those vessels which open upon the trunk and upon the leaves. Like pulmonary tubes, which are seen branching through the bodies of insects, they perform an office similar to that of the trachea and bronchia; and are those general receptacles of air from which the neighbouring parts of the plant secrete what is needed. The air vessels are surrounded by those which contain a liquid during the whole time of the growth. They are the largest vessels of the wood, and distinguished from the bark; and in the leaves they may sometimes be seen even without the assistance of glasses. Their cavity is formed by certain fibres which wind spirally like a cork-screw. In the leaf they generally approach and recede like the filaments of nerves; but they never infuse from one end of the plant to the other, except at the extremities.

The respiratory organs, which are similar either to the gills of fishes or the lungs of man, can hardly be claimed a description, as their nature and forms are so generally known. There is one circumstance, however, in birds, which we must notice: the cells of their bones, and the numerous vesicles of their soft parts which communicate with the lungs, have been deservedly a matter of surprise to most physiologists. In accounting for their use, the ingenious HUNTER supposed that they lessened the specific gravity and assisted flying; that being the circumstance which he thought most peculiar to birds. Learning afterwards that they were in the ostrich and not in the bat, he supposed that they were appendages to the lungs. In amphibious animals, in the snake, viper, and many others, he observed, that "the lungs are continued down through the whole body in the form of two bags, of which the upper part only can perform the office of respiration with any degree of effect, the lower having comparatively but few air-vessels." In these animals, the use of such a conformation of the lungs was to him evident. "It is in consequence of this structure," said he, "that they require to breathe less frequently than others." From this reasoning he inferred, that the motion of flying might render the frequency of respiration inconvenient; and that a reservoir of air might therefore become singularly useful. The bat and the ostrich, however, are here as formidable objections as before. The bird respire frequently when at rest, and when it flies to our vision from the hawk; that frequency seems to have been increased by what is a general and a common cause, an increased degree of muscular exertion. This great physiologist was not aware that he circumstance most peculiar to birds was not their act of flying, but their feathers, which con-

tain a large quantity of air; and which require a regular supply, whether they soar on the wings of the eagle, or remain on the ground attending the ostrich. Both in amphibious animals and birds, the air of the vesicles has passed the respiratory surface of the lungs. In the tracheæ of plants, and the pulmonary tubes and vesicles of insects, it is only proceeding on its way to be respired.

From the general diffusion of air through the birds, and the situation of their vesicles beyond the lungs, it would appear that the pulmonary viscus in these animals does not respire or secrete air for the whole system; and we are certain that, in plants and insects, most parts respire the air for themselves, and that there is no particular part appointed to secrete air for the whole. We here speak of respiratory organs, as those which secrete an aeriform fluid from water and air; but our language probably had been more accurate, had we called them the organs in which an aeriform fluid is absorbed by their liquid contents, as these flow by, either wholly or in part, in their course through the system. It was long denied that any absorption of the air took place from the pulmonary surface. Borelli, however, endeavoured to show, air in the lungs might mingle with the blood, and how some always disappeared in respiration. There are few doubts now entertained on this subject. Venous blood inclosed in a bladder by the celebrated Priestley discovered such an attraction for oxygen, that it absorbed the aeriform fluid through all the coats of the resisting medium, exhibiting an instance and beautiful illustration of the chemical affinities which take place in this function.

There are two kinds of *respiratory organ*, which, though sometimes included in the general expression, should always be considered as perfectly distinct. The first kind comprehends those in which the water and the air are decomposed; the second, those by which these fluids are properly applied to the respiring surfaces of the former. We observe these last in the flutering motion of the leaf itself, or in that tendril which turns the surface of the leaf to the sun. We see them producing these oscillatory motions in the branching gills of the *pales arborescens*. When the breathing surface is within the body, we discover them again in the tracheæ of plants, whose cavity is formed by a spiral fibre that is seemingly intended for some kind of peristaltic motion. We detect them likewise in the pulmonary tubes, in the spiral rings, and in the abdominal movements of insects. We see them in fishes swallowing the water, and propelling it onward through the fringes of the gills. In the frog, we note them by the motions of the pouch between the sternum and the lower jaw. After this animal is divided transversely behind the fore legs, this pouch continues to fill and to empty itself downwards by the tracheæ where the lungs were. When the whole integuments and some of the muscles between the jaw-bone and sternum are removed, we see how the pouch was dilated and contracted by a broad cartilage connected with the trachea, and attached by muscles to the inside of the sternum and the neighbouring parts. When the pouch is enlarged,

ed, the air rushes in through the two nostrils at that time expanded; and when it is contracting, the glottis starts up with an open mouth to the middle of the pouch, and the air is pressed down through the tracheæ to the lungs. This amusing sight will sometimes continue for a whole hour. In man, and all the warm-blooded quadrupeds, the thorax or cavity where the lungs are placed, is dilated and contracted by the diaphragm and muscles attached to the ribs. In the time of dilatation, the glottis opens, as we see in birds: the air rushes in, supports the incumbent weight of the atmosphere, and enables the thorax to expand wider. The expanding powers having made at last their usual effort, their antagonists succeed, exert their force, and the air is expelled.

The heat of the lungs expands the air as soon as it enters. The air rapidly absorbs moisture; and though not usually remarked by physiologists, yet the sudden expansion which is always the consequence of that absorption, is a very general phenomenon in nature. By this heat, or absorption, the air would occasion greater dilatation, were it not for the lungs, which collapse; the cartilages of the sternum, which recoil; and the stretched-out muscles, which, either spontaneously or directed by the will, contract and produce expiration.

Having thus seen how the air rushes in on opening the glottis, we may conceive how the shutting of the glottis will resist the force of internal expansion, and support a weight laid upon the breast. The confined air will expand equally on all sides, and the pressure must be great before the space which falls to the glottis can exceed its own muscular force and the weight of the atmosphere. It is this diffused pressure of fluids that produces such striking woublers in hydraulics; and which explains how the droppings of the ureters should expand the bladder even to a palsy, and overcome the abdominal muscles.

Various hypotheses have been invented, to account for the action of those organs which serve as auxiliaries in respiration, but all derived from such limited views of the subject, that no decisive theory can be drawn from them. But it is fortunate for man that these assisting respiratory organs are in some measure subject to his will. By this subjection he produces vocal sound when he pleases, divides it into parts, varies it by tones, forms it into words, and enjoys all the distinguished and innumerable advantages derived from language, oratory, music, and, in a word, science in general.

SECT. II. Of Digestion.

THE function of digestion succeeds respiration by either continuing or supporting the growth of the living body. It depends on respiration for a portion of heat, and is that function by which the liquid and solid food undergoes its first preparation in the system. Though gaseous fluids, including the principles of heat and light, may nourish and compose the substances of all living bodies, yet a part only can enter the system in a gaseous state. This part is changed by the lungs, or by those fluids which they contain. The organs of digestion, before they can act on aerial bodies, must have them reduced to some new form. For the

food of vegetables, this form requires to be water, whose 100 parts consist of 84 $\frac{1}{2}$ of oxygen and 15 $\frac{1}{2}$ of hydrogen. See WATER. When the gases have passed through both the watery and vegetables states, they, as juices or solids, become the food of many animals.

These animals produce new changes, and by their preparation the gases become the food of others which are called *carnivorous*; and then the carnivorous, and all living bodies, when the vivifying principle has ceased within them, and when they are hastening to a state of dissolution, are devoured by others who feed on corruption, are partly converted into water and gas, and become, in their turn, the food of the kinds on which they had fed.

It has been long observed, that those animals which are not carnivorous, feed upon plants; and, since the days of Van Helmont and Boyle, it has been suspected that plants live upon water and air. This suspicion has now been confirmed by numerous experiments. Plants have been raised from distilled water without earth, and, instead of requiring a vegetable mould, have spread their roots in moss, in paper, in cotton, in pieces of cloth, in pounded glass, and powder of quartz. From these facts, the ingenious CHAPTAL supposes, that soils act but as so many sponges, affording water in different proportions, and in different ways; and that all that the plant wants from the soil, is a firm support, a permission to extend its root where it chooses, and that proportioned supply of humidity which will secure it against the alternatives of its being inundated or dried up. The late Dr John Brown was of the same opinion 25 years ago. To answer, however, these several conditions, M. Chaptal says it is necessary in many cases "to make a proper mixture of the primitive earths, as no one in particular possesses them." On these accounts, a single earth cannot constitute manure, and the character of the earth intended to be meliorated, ought to be studied before the choice of any addition is decided on. The best proportions of a fertile earth for corn, are three 8ths of clay, two 8ths of sand, and three of the fragments of hard stone. "The advantages of labour consist in dividing the earth, aerating it, destroying useless or noxious plants, and converting them into manure by facilitating their decomposition."

"Before we had acquired a knowledge of the constituent principles of water," resumes Chaptal, "it was impossible to explain, or even to conceive the growth of plants by this single aliment. In fact, if the water were an element, or indecomposable principle, it would afford nothing but water in entering into the nutrition of the plant, and the vegetable would of course exhibit that fluid only; but when we consider water as formed by the combination of the oxygenous and hydrogenous gases, it is easily understood that this compound is reduced to its principles, and that the hydrogenous gas becomes a principle of the vegetable, while the oxygen is thrown off by the vital forces. Accordingly, we see the vegetable almost entirely formed of hydrogen. Oils, resins, and mucilages, consist of scarcely any thing but this substance; and we perceive the oxygenous

eous gas escape by the pores where the action of light causes its disengagement."

The leech and the tadpole are also nourished by water, and many animals have no other food. RONDELET cites a great number of examples of marine animals which cannot subsist but by means of water, by the very constitution of their organs. He kept during three years a fish in a vessel constantly maintained full of very pure water. It grew to such a size, that at the end of that time the vessel could not contain it. The red fishes which are kept in glass vessels are also nourished, and grow, without any other assistance than that of water properly renewed."

As all plants are fed on nothing grosser than liquids, we see the reason why they are all nourished by absorbents, and why, instead of one common alimentary canal, they are furnished with a number of capillary vessels, which by their action assist the living power in moving the fluids along the trunk, the branches, and the leaves. These fluids move between the different ligneous circles, and the more copiously as the wood is younger or the nearer the circles are to the bark. In the circles themselves, it has been remarked that the sap-vessels from being empty during a great part of the growing season, have been called air-vessels; that they are formed of spiral fibres, adapted to some peristaltic motion: and it is plain, that by this structure they are well fitted to propel their contents, whether water or air, upwards or downwards, backwards or forwards, according to the different positions of the plant. Besides the particular action of the vessels, a general concussion is received from the movement of the waters or winds, which serves as an exercise; a general dilatation is occasioned by both moisture and heat; and a general contraction by dryness and cold, which produce a motion something similar to that of the thorax.

In spring the sap ascends through the empty vessels before the leaves appear. When the vessels are filled through their whole extent, the buds swell, the leaves spread, and the flowers blow; the evaporation from the surface is increased; the sap is diminished by the absorption; the succiferous vessels now cease to bleed; and the roots being unable to supply the waste, the rains and the dews enter by the trunk, the branches, the leaves, and the petals of the flowers. When the evacuations are immoderately increased by excessive heat, or preternaturally obstructed by the plucking of the leaves, by too much humidity, or other causes which prevent perspiration, the plant soon either sickens or dies. The chyle, which is formed in the sap vessels, has generally something of a saccharine taste.

MOST ANIMALS have, like vegetables, both inhaling and exhaling vessels, by which some of their fluids are absorbed, and evacuations regularly carried on. Except, however, in those animals which subsist by liquids, these vessels are of little importance in receiving food or ejecting what is fecal from the system. In these animals the absorbents terminate in a hollow viscus, which is called the alimentary canal, where the fluids undergo a preparatory change, and are partly reabsorbed for assimilation. In all others the food enters by a proboscis,

or by an aperture called the *moutb*: this mouth is properly the entrance of the alimentary duct. It is very generally furnished with a tongue, which is usually assisting in deglutition; and if the food be of that nature to require cutting, tearing, or grinding, it is likewise furnished with the proper instruments for these operations. When the food is testaceous or some hard vegetable substance, and these instruments are not in the mouth, something similar is generally found in a more remote part of the canal. The crab and the lobster have accordingly grinding teeth in their stomachs, and granivorous fowls have a powerful gizzard lined with a thick corneous substance. It possesses the compressing force of the jaws; and small pebbles which the animals swallow, serve it for teeth.

Besides grinding, the solid food often requires to be mixed with some additional liquid. In those carnivorous animals which chew, this liquid, during the time of mastication, flows into the mouth from certain glands in the neighbourhood. In some species of *Amia* a previous dilution takes place in two pouches situated on the sides of the lower jaw. In granivorous birds this dilution is usually performed in a sac, which is a dilatation of the canal; and the food being macerated there by the glands or exhaling vessels, gradually passes down, as is needed, to be triturated and further prepared in the stomach. In the ruminating kind the dilution is performed in a similar manner; but these having no muscular stomach fitted for grinding, instead of descending, the food is brought up again into the mouth, and is then, after the proper mastication, sent to the stomach. If the food require no mastication, it is sent directly that way at first: a circumstance which shows a curious discernment with respect to foods, and proves that this alimentary canal is subject to the action of voluntary muscles as far as the stomach. Some of those birds which have a diluting sac or ingluvies seem likewise to ruminate. This in the parrot was observed by the gentlemen of the French academy. It has since been observed in rooks, macaws, cockatoos, and others: and Mr Hunter discovered, that the male and the female pigeon secrete in their ingluvies a certain liquor for feeding their young; and that the most kinds of what have been thought ruminating birds do very often, in expressing their fondness, regurgitate their food. Yet both this and another species of regurgitation, which is very common with those animals that swallow indigestible substances with their food, should be carefully distinguished from rumination.

To the ruminating kinds the diluting sac is by no means peculiar. The porpoise has one, though it does not ruminate; and many of those animals which have none, as the rat, the hog, and the horse, have a part of the stomach covered with a cuticle, and which must therefore principally serve as a reservoir. The gullets of several fishes and serpents are sacs of this kind. A part of their prey projects often from the mouth, while another part fills up the gullet and gradually descends, to be reduced in the solvent below. So very dilatable are the stomachs and the gullets of some animals, that serpents have been often seen

to swallow whole animals, which, prior to the gorging, were larger than themselves; and many polypes, and even some of the louse kind, will, by swallowing food, more than double their own bulk.

All animals which ruminate have two stomachs, or at least two divisions in one; some have three, as the gazella; and some four, as the cow, the dromedary, and the sheep: but the number of stomachs is no proof of a ruminating power. The porpoise has two; the porcupine has three divisions in one; and the cassowary, although it has four stomachs, does not ruminate; nor, although granivorous, has any one of the four a gizzard. Somewhat different from these expansions in the first part of the alimentary canal, is a sort of pouch which hangs from the neck and the lower mandible of several birds, and which, like the two pouches of apes, may be used either to macerate the food or to carry provisions from a distance to their young. The pelican, a native of warm countries, employs this pouch sometimes to carry a quantity of water.

Besides the fluids which mingle with the food in the mouth, the gullet, or macerating facs, there is one denominated the *gastric juice*, which acts in some measure as a solvent. It is secreted from large glands at the entrance of the gizzard, from vessels or glands in the coats of the stomach, and perhaps most plentifully near the pylorus: it powerfully resists the putrefactive fermentation; it coagulates milk and the white of an egg; it dissolves food even when inclosed in metallic tubes; and when life ceases, it acts frequently on the very stomach from which it was secreted. Its taste, colour, and solvent powers, are different in different classes of animals. It seems to be modified according to the age, the health, the habit, and the different aliments on which they live. But what is most surprising in the gastric juice is, that it spares all living bodies, as those worms which exist in the stomach, and the stomach itself while it is alive; and it has an assimilating power, and reduces all substances, whether animal or vegetable, on which it acts, to a certain fluid of determinate properties, called *CHYLE*.

The food, after passing through the stomach, is mingled with a greenish saponaceous liquor, called *BILE*, which flows either immediately from the liver, or from a vesicle into which it had regurgitated as into a blind gut; at the same time nearly it is mingled with another resembling the saliva from the pancreas or sweet-bread; a gland or glands whose place is supplied in many fishes by a number of vermicular appendages to the stomach. In short, from one extremity of the alimentary canal to the other, fluids are perpetually flowing into its cavity from glands, vessels, or organic pores; and the membranes constantly secreting a mucus to protect themselves from the acrimony of their contents. This acrimony must often be considerably near to that end of the canal where the feces are discharged; for, as the first part of the canal has generally one or more dilatations called *stomachs*, and secretes at least one fluid which is strongly antiseptic, so the last part has generally appendages called *cæca*, where the food always remains for some time, and where, from the quantity of animal matter that happens to be mixed with it, it

becomes putrescent. The office of the *cæca* is sometimes applied by the largeness and convolution of the colon, as in the bear whose intestines are 40 feet long, but have no *cæcum*. The *cæca* are of various forms and capacities; they are often larger than the stomach itself; are often composed of proportionally thin and transparent membranes; and from their contents have often a colour somewhat resembling that of the gall-bladder. Their number is different in different animals. Some have but one. The birds which have them have generally two; the bustard has three; and Swammerdam has dissected insects which had four. The *cæcum* of both the rabbit and the hare is curiously formed. It is large and beautiful; is rolled up like a cornu ammonis; and has a fold running spirally within. The animals which live on vegetable food have usually the greatest length of the canal, and the greatest number of stomachs and of *cæca*: yet the cassowary, which has no gizzard, has no *cæcum*; and the polype, which is said to be all stomach, is, properly speaking, rather all *cæcum*.

In treating of the process of digestion, we must not overlook the general organic action which runs through the whole alimentary canal. The power of mastication exerted in the mouth is obvious. But the force of some stomachs has till very lately been known to few. Abbe SPALLANZANI divided stomachs into 3 sorts; the muscular, the membranaceous, and intermediate. BORELLI tried the force of the muscular stomachs by throwing into them nuts of filberds, hollow spheres of glass, hollow cubes of lead, small pyramids of wood, and several other very hard substances, supposing that the power exerted by the stomach of the Indian cock was equal to 1350 lb. weight. The force of an intermediate stomach cannot be so great, and that of a membranaceous one must be still less. Each seems to have more of the solvent as it has less of the muscular power. The most membranaceous are assisted by the action of the neighbouring parts, and expel their contents as readily as the strongest. The muscular sort is either wholly or principally confined to certain kinds of birds and of fishes. This comminution takes place in their stomachs.

The direction of hairs found in the stomachs, and the balls of hair which are thrown up, indicate a circular motion in the alimentary canal. The intestinal part has a motion similar to that of a worm, and is called the *vermicular or peristaltic*. Every portion retains its own motion, though separated from the rest by ligatures. The stomach of the polype, the gullets of the ruminating kinds, and the *cæca*, have this motion in different directions at different times; and that observed in the alimentary canal of a louse is, when viewed through a microscope in the time of action, amazingly rapid; the stimulating causes employed are the food, the different liquors with which it is mixed, the air, the nerves where they exist, and a portion of heat. Some degree of heat is necessary to every process of digestion, both in the animal and vegetable kingdom: what that degree is, depends on the nature of the living body, and is various according to its age, health, employment, and habits. The ingenious Hunter has mentioned the digestive and generative heats; and gardeners versant in the operations

tations of hot-houses, have on their thermometers the swelling, flowering, and the ripening heats, with a great many others, for the plants which they raise. Among the other causes of digestion, some authors have ranked FERMENTATION: and it must be allowed, that something similar to the putrefactive fermentation takes place in the cæca and the lower extremity of the intestine, and that the vinous and acetous fermentations but too frequently occur in our stomachs when that viscus is morbidly affected.

Living bodies are much regulated by the different degrees of heat, the varieties of soil, and the kinds of food concerned in digestion. The plants grow where the soil and heat are congenial to their nature; and those which admit of the greatest variety with respect to soil, and the largest range on the scale of heat, are the farthest dispersed over the globe. As every soil has usually some regular supply of moisture, the plants that can live upon that supply extend their roots under the surface; where their liquid food is the least exposed to evaporation. If their trunks need a support, they creep on the ground, they climb the face of a neighbouring rock, or cling to the body of some of the stately children of the forest. Their range for food is chiefly confined to the small space occupied by their roots and branches; yet if any uncommon exertion be necessary, the branches will bend, and the leaves turn to drink of the water that is passing by. If the roots be laid bare, they will again plunge into the earth; if a stone or a ditch be thrown in the way, they will move round or will dip downwards, and spread into the soil on the other side: if there they arrive at one that is unfriendly, they will not enter; but if a favourite earth should be near, though not in their direction, they will twist about, advance as they grow, and at last meet it. In all these cases the prop, the water, and soil, must be necessary; they must also be within a very small distance, otherwise the plants cannot perceive them, or will fail in their languid attempts to approach them.

It may be considered as a general fact, that wherever food is liberally supplied for a whole lifetime, in one place, the creatures which use it have seldom much locomotive power, or much inclination to exercise it in a long continued and progressive line. The curious insect is therefore observed to deposit its offspring in those places where the prospect of genial warmth and of plenty seems to preclude the future necessity of wandering or research; and when this offspring is about to pass into a new state, and the organs foretell that a change or perhaps a variety of food will soon be required, the appearance either of wings or of legs does likewise foreshow that the power of locomotion is to be increased. The nobler animals, when the organs of digestion are strong and the appetite inclines to variety of aliment, wander in search of it, and move at intervals from place to place. Such are often endued with a large alimentary canal, with stomachs, convolutions, and cæca, where they may lay up provisions for a journey.

This variety of food, and the manner in which it is affected by climate, are the cause of the many and singular migrations from spot to spot, from

country to country, and from sea to sea: they are the cause of a state of torpor in the hedge-hog and the bear, and they partly explain the provident foresight of the ant and of the bee. Animals of great locomotive power, to provide for themselves and their offspring, remove to a distant country or climate. Those of less locomotive power, and who are incapable of migrating far, lay up a store for the scarcity to come; or, should the food be of that kind as not to be easily preserved, their system becomes susceptible of torpor, and they are enabled to sleep through the period of want.

SECT. III. Of Absorption.

When the food has undergone the first preparation, by digestion, and the chyle is formed in the alimentary canal or sap-vessels, it is thence taken up by means of absorption for the use of the system. From the vessels it passes into the whole cellular tissue, composed of vesicles, and closely interwoven with all the vascular part of the plant. From the vesicles or utricles of the cellular tissue it enters the vasa propria and glands, which contain and prepare the fluids and secretions peculiar to the species.

It was supposed that the chyle was absorbed by the ramifications of the red veins spreading on the gut, till 1622, when Asellius an Italian discovered the lacteals running on the mesentery of a living dog, and printed his account of them in 1627. As he had not traced their course very far, he thought that they went to the liver. This opinion continued to be general till 1651, when Pecquet in France published his account of the thoracic duct: He owned that he had been led to make the discovery, by observing a whitish fluid mixed with the blood in the right auricle of the heart of a dog. The lymphatics were first discovered by Rudbeck, a young Swedish anatomist; and Thomas Bartholine, a Danish anatomist, first published upon them. His book came out in 1653, GLISSON, who wrote in 1654, has ascribed to these vessels the office of carrying the lubricating lymph from the several cavities back into the blood; and Frederic Hoffman affirmed they were absorbents very explicitly. On the 19th June 1664, SWAMMERDAM discovered the valves of these vessels; and RUYSCH, who had seen them, perhaps very nearly about that time, first gave an account of them in a treatise published at the Hague in 1665.

The most decisive mode of demonstrating the lymphatics we owe to the celebrated NUCK, who, as a specimen of that complete System of Lymphography which he meant to publish, printed in 1691 his *Adenography*, or Description of the Glands. In this treatise he not only tells us how he brought them into view, but in his plates represents many of them as filled with his new-mercurial injections; a happy invention, since followed by others. A method by which he inflated these vessels led him to suppose that they took their origin from veins or arteries, either immediately or through the intervention of some follicles. The celebrity of his name, procured credit to this mistake; and notwithstanding the founder opinion of Glisson, Hoffman, and others, the old notion that the veins performed the office of absorbents came so far down as Haller and Meckel. The arguments, however, by which it was supported, are shown

now

now to have been erroneous; while the boasted assertion, that birds and fishes were without lacteals or lymphatics, has been disproved by the fortunate discoveries of Mr HENSON and Dr MONRO. Excepting, therefore, in the penis and placenta, and in those animals whose veins may be injected from the gravid uterus, the lymphatics perform the whole business of absorption. They contain a fluid that is coagulable like the lymph of the blood, and are called valvular, to distinguish them from the arteries that do not admit the red globules. They derive their origin from the cellular membrane, from the different cavities, and from the surface. They both run into the veins; but most of the lymphatics in the human subject, and all the lacteals, first unite in the thoracic duct, which near the heart leads into the course of the circulation.

SECT. IV. OF CIRCULATION.

AFTER part of the food is converted into chyle, and this chyle is absorbed by the lacteals; and brought into the course of the circulation, it is distributed to all the different parts of the system. On this account HIPPOCRATES speaks of the usual and constant motion of the blood, of the veins and arteries as the fountains of human nature, as the rivers that water the whole body. When, after his time, anatomy came to be more studied, the notions of the ancients respecting the blood were better defined; and, however chimerical they may seem to us, they were partly derived from dissection and experiment. On opening dead bodies, they found that the arteries were almost empty, and that very nearly the whole of the blood was collected in the veins, and in the right auricle and ventricle of the heart. They therefore concluded that the right ventricle was a sort of laboratory; that it attracted the blood from the cavæ; by some operation rendered it fit for the purpose of nutrition, and then returned it by the way it came. From the almost empty state of the arteries they were led to suppose, that the right ventricle prepared air, and that this air was conveyed by the arteries to temper the heat of the several parts to which the branches of the veins were distributed.

This last notion was entertained by Erasistratus. Galen added an important discovery. By certain experiments he proved that the arteries contained blood as well as the veins. But this discovery was the occasion of some embarrassment. How was the blood to get from the right to the left ventricle? To solve the difficulty in which his new discovery had involved him, he supposed that the branches of the veins and arteries anastomosed; that when the blood was carried to the lungs by the pulmonary vein, it was partly prevented by the valves from returning; that, therefore, during the contraction of the thorax, it passed through the small inosculating branches to the pulmonary vein, and was thence conveyed, along with the air, to the left ventricle, to flow in the aorta. This opinion, though agreeable to fact, soon gave place to another that was the result of mere speculation. This was, that the left ventricle received air by the pulmonary vein; and that all its blood was derived through pores in the septum of the heart.

The passage through the septum being once suggested, it was generally supposed the only one

for a number of centuries; and, supported likewise by Galen's authority, it was deemed blasphemy in medicine to talk of another. In 1543, however, VESALIUS having published his immortal work upon the structure of the human body, and given his reasons for dissenting from Galen, showed it was impossible that the blood could pass through the septum of the heart. His reasoning roused the attention of anatomists, and every one grew eager to discover the real passage which the blood must take in going from the right to the left ventricle. The discovery of this fell first to the lot of Michael Servetus, or SERVETUS, a Spanish physician, who published his opinion, and revived the old doctrine of Galen, in 1553. But his opinion did not spread; the book in which it made its appearance contained heresy, and was destroyed by public authority. Fortunately, the same discovery was again made by Realduus Columbus, professor of anatomy at Padua and Rome, who printed his account of it in 1559. Many others, engaged in the same research, were equally successful, and Andrew Cæsalpinus was singularly lucky. It appears, by his *Peripatetic Questions*, printed at Venice in 1571, and reprinted in 1593, that he knew not only the lesser circulation, but had observed that there were times when the blood flowed from the branches of the veins towards their trunks, and that veins swelled between their ligature and the extremities, and not between the ligature and the heart. From these observations he inferred that the veins and arteries anastomosed; and he ventured to assert, that the blood could not return by the arteries to the left ventricle. Yet he did not discover the true circulation. Being a zealous peripatetic, he thought himself bound to maintain with Aristotle, that the blood flowed like the tides of Euripus backwards and forwards in the same channel; and therefore supposed that it flowed from the arteries into the veins in the time of sleep, and from the veins back into the arteries in the time of waking. The greater circulation, so far as we can learn, was not even dreamed of by this writer. A farther step was yet to be made towards its discovery; and this was reserved for another professor of the Paduan school.

In 1574 Hieronymus Fabricius ab Aquapendente, while seeking for the cause of the varicose swellings of some veins, which had arisen from friction and ligature, he to his great joy discovered their valves in one of his dissections; and thus again the true theory of circulation seemed almost unavoidable. Yet whoever reads the small treatise *De Venarum Officiis*, first printed by Hieronymus Fabricius ab Aquapendente in 1603, will see that he was as far from entertaining a just notion of the circulation as his predecessors. Notwithstanding all that he saw, he still was of opinion that the blood flowed from the heart to the extremities, even in the veins. He calls them an instance of admirable wisdom, and mistakes his own awkward conjecture for one of the designs of infinite intelligence. Yet he bore no inconsiderable share in promoting the discovery of the circulation. By writing on the valves, the formation of the fœtus, and the chick in ovo, he directed the attention of his pupil Harvey to those subjects, where it was likely that the motion of the blood would frequently occur.

HARVEY

HARVEY was born at Folkstone in Kent, in 1578, completed his studies at Cambridge, went to Padua, and was there admitted to the degree of M. D. with unusual marks of applause, in 1602. He examined the valves with more accuracy than his master Fabricius; and explained their use in a treatise which he published some time after. About 1616 he first taught his celebrated doctrine of the circulation, and printed it in 1628. He was the first author who spoke consistently of the motion of the blood, and drew rational conclusions from his experiments and observations. His books present us with many indications of a great mind, acute discernment, unwearied application, original remark, bold inquiry, and a clear, forcible, and manly reasoning; and every one who considers the surprise which his doctrine occasioned among the anatomists of those days, the strong opposition that it met with from some, and those numerous and powerful prejudices which it had to encounter from the sanction of time and of great names, must allow that the author has a title to rank in the first class of eminent discoverers. His discoveries showed, that in most animals the blood circulates in arteries and veins, and through the medium of one, two, or more hearts; that in arteries it moves from the trunk to the branches; and that, meeting there with the branches of veins, it returns in a languid stream to the heart; that the heart communicates a new impulse; that it drives it on to the trunk of the arteries; and that the arteries, by the thickness of their coats, exerting a force, push it onwards again into the veins.

In every part of this circulating course there are valves situated where it is necessary; they are meant to prevent the return of the blood; they are at the beginnings of the great arteries, and are found in different places of the veins where their feeble action requires to be assisted. The veins, before they enter the heart, generally expand into a thin muscular sac, which is called the *auricle*. It receives the blood while the heart is contracting; and, when the heart admits of dilatation, contracts itself, and throws the blood into the ventricle.

We have here called the ventricle a *heart*; though what is usually meant by the heart be a ventricle and auricle, or sometimes a ventricle and two auricles, where the veins approach in different directions, and, without bending to meet one another, expand at two different places. Two hearts are sometimes united, so as in appearance to form but one; hence the modes of circulation are various. In some animals the heart throws its blood to the remotest parts of the system; in others it throws its blood only into the respiratory organs; from these it is collected by the branches of veins; and these branches, uniting in a trunk, convey it to an artery, which renews the impulse, and acts as a heart. In a third set of animals, the blood from the respiratory organs is carried by the veins to another heart; and this second heart, united in the same capsule with the first, distributes the blood by the channel of its arteries to the several parts. In the human fetus, and the fetuses of those animals which have two hearts, a part of the blood, without taking the passage through the lungs, proceeds directly from auricle to auricle. In amphibious animals the auricular passage

continues open during their life, and is employed, when the breathing ceases under the water. In many insects, a number of hearts, or expansions which answer the purpose of hearts, are placed at intervals on the circulating course; and each renews the impulse of the former where the momentum of the blood fails. In the *Sepia Loligo* the two separate parts of the gills are each supplied by a heart of its own; the blood from both is collected into one; which, by two arteries opening at two different parts, send it at once to the opposite extremities. In numbers of animals, the heart, like the stomach, is in the extremity opposite to the head.

After the discovery of the circulation, the most interesting object with anatomists was to demonstrate it in a clear, satisfactory, and easy manner. Harvey, to show it with every advantage, was obliged to open animals alive; but whether the animals were dead or alive, the larger branches of the veins and arteries were only to be seen, and even these but in certain cases, when they happened occasionally to be full of blood. That admirable method, which is now observed in demonstrating the course of the circulation, we owe to the great anatomists of Holland who flourished in the 17th century. About 1664 Regnier de Graaf invented the syringe, and, accompanied with a print, published an account of it in 1669. His injection was usually a thin fluid of a blue, green, or some other colour; this injection transfused through the vessels, allowed them to collapse by its general diffusion, and broke out through the first opening that happened in its way. A fluid which hardened after being injected, and which preserved the vessels distended, was a happier contrivance. This at first was either melted tallow or wax, of a colour suiting the taste of the anatomist. So early as 1667 Swammerdam injected the vessels running on the uterus with wax; and transmitted preparations, with plates and a full account of his method, to the Royal Society of London in 1692. Soon after, his friend Kuyfich acquired such skill in the art of injecting, that he has not been surpassed by any since his time. He discovered vessels in many parts where they were not supposed to have had an existence; and, contrary to the great Malpighi, showed that even many of the glands were entirely vascular. Another discovery was made, for demonstrating their small capillary branches running through a part, by the very ingenious Dr NICHOLLS of London; who invented the method of corroding the fleshy parts with a menstruum, and leaving the wax, as it was moulded by the vessels, entire.

In the vegetable kingdom, the chyle is distributed to all the parts from the numerous vessels which convey the sap; and these vessels, being fitted by their structure to carry the sap either downwards or upwards, from the branches to the roots, or from the roots to the branches, is the reason why plants inverted in the ground will send forth roots from the place of their branches, and send forth branches from the place of their roots. Even a similar distribution of the chyle takes place in some animals. In the human *tenia*, in the *fasciola hepatica* of sheep, and in most polypes, the chyle, without a circulating system,

is conveyed directly to the different parts from the alimentary canal.

Another circumstance respecting the blood, which sometimes has engaged the thoughts of physiologists, is the colour which it has in most animals. The late Mr HENSON, was of opinion, that the lymphatics, with the spleen and the thymus, contributed greatly to the formation of the red globules. (See BLOOD, § 7.) His reasoning, however, though very ingenious, is not conclusive. The celebrated NUCK, who had often observed a reddish fluid in the lymphatics, assures us, that such an appearance was always preternatural; and was either occasioned by a scarcity of lymph, or by some irregular and too much accelerated motion of the blood.

The blood receives its vermilion colour in passing through the lungs; animals with lungs have the blood redder than those which are seemingly without that organ; and the colour, as well as the heat, is in proportion to the extent and perfection of the lungs. Oxygenous gas is absorbed in respiration; and it has been proved by experiment, that the red globules of the blood, and the red only, contain iron, and that the colour is owing to iron calcined by the pure air, and reduced to the state of red oxyd. From this manner of conceiving the phenomena, says Chaptal, we may perceive why animal substances are so advantageous in assisting and facilitating the red dye.

Various experiments have proved how much the colour and consistence of the blood is altered by the action of the vessels; and this discovery has enabled us to conjecture, why infants and phlegmatic persons the blood is paler; in the choleric more yellow, and, in the sanguine, of vermilion red; why the blood varies in the same individual, not only with regard to the state of health, but likewise at the same instant; why the blood which circulates through the veins has not the same intensity of colour, nor the same consistence, as that of the arteries; why the blood which flows through the organs of the breast differs from that which passes languidly through the viscera; why the vessels vary in the density of their coats, and in their diameters; why they are sometimes convoluted in a gland; why they sometimes deposit their contents in a follicle; why they are sometimes of a spiral form; why the branches strike off at various angles; why they are variously anastomosed; why they sometimes carry the blood with dispatch, and sometimes slowly, through a thousand windings. By these means their action is varied, and the blood prepared to answer the purposes of nutrition and secretion.

SECT. V. Of NUTRITION.

"NUTRITION (says the ingenious Dr BARCLAY,) is the function which assimilates the food in the several parts, and which finishes the process begun in the stomach, lungs, and vascular systems. In perfect animals some of the stages of this process are distinctly marked. The chyle, which has some resemblance to milk, is the work of the alimentary canal: it undergoes some new changes by the action of the lacteals, and of their glands when they exit. In the course of circu-

lation it passes along the respiratory organs, and is mixed with oxygen or some other gas: by this mixture, the consequent heat, and the action of the vessels, it is turned into blood. The blood, when examined, spontaneously separates into three parts; an albuminous part of a serum, a coagulable lymph, and red globules. The two first are analogous to the white parts of an egg, by which the chick in ovo is nourished; the globules have some resemblance to the yolk, which serves afterwards as food to the chick in the more advanced period of life. The three parts contain in each a variety of principles which are originally composed of gases: these principles, conveyed through vessels of various forms, of various diameters, and with various degrees of motion and of heat, and all along varying as they pass, arrive at last on the confines of the parts which are wrapped up in a cellular tissue or some other membrane. The tissue or membrane gives a new change; the parts nourished perform the office of secreting organs; and as the action of the vessels is varied according to the place to which they are tending and the parts which they enter, we partly see the manner in which bone, muscle, cartilage, and nerve, are all secreted from a common mass."

Nutrition is carried on in worms and polype after digestion, almost entirely by the cellular tissue; and in plants by a tissue cellular and vesicular. In all living bodies the cellular tissue, besides giving a form to the parts, and preventing friction and cohesion, certainly performs some important office. Many have thought it the organ of nutrition; and it certainly is one of the organs employed in assisting to assimilate the nutritious fluid. But in fact all the parts of the living body are assimilating organs; each part assimilates for itself; and the stomach, the respiratory organs, the vessels, and nerves where they exist, are assistant to the whole, and to one another. It is surprising that any should have imagined that the nerves are peculiarly the organs of nutrition, or that growth should be owing to the addition of some organic and vivifying particles pre-existing in the food. These physiologists have not demonstrated the existence of nerves in all living bodies; and these organic and vivifying particles have as yet been discovered but in their fancy. Dr MONRO has proved, that the limb of a frog can live and be nourished, and its wounds heal, without any nerves; and Mr HUNTER has given many instances of a living and nutritious power in the blood.

"In plants and animals, the assimilating power has always certain limits: its influence is very generally confined to the sort of food congenial to the species; and its strength is varied according to circumstances, as the age, the habits, and the state of health. Young animals and plants assimilate faster than old; and one species will assimilate much faster than another. Certain worms that feed on animal and vegetable substances will, in 24 hours after their escape from the egg, become not only double their former size, but will weigh, according to Redi, from 155 to 210 times more than before. Most oils are of very difficult assimilation; essential oils will often resist the long continued and the varied action of the living organs;

gans; will mingle with the parts, and undecomposed, communicate their flavour. In living bodies nutrition is only a species of secretion."

SECT. VI. OF SECRETION.

SECRETION is a function by which a part is separated from the whole, and generally with some change of its qualities. In the case of nutrition it was observed, that all parts secrete for themselves; and that some few, as the lungs, the stomach, the vessels, and the nerves, officiate besides for the general use of the whole system. If all the ingesta were to remain and to be assimilated, the body would continually increase. But living bodies are constantly in a state of waste and repair. In most animals part of the ingesta is carried off by evacuation, without having entered the mouths of the absorbents; part, which enters the absorbents and veins, is thrown off by exhaling arteries or the urinary passage; and experiments with madder prove that the lymphatics, besides originating from all the cavities and carrying back the lubricating fluids, do enter the substance of the hardest bones, and convey particles that had been assimilated back into the blood.

The fæces, the urine, and perspirable matter, are remarkably distinguished by two kinds of odour; the one peculiar to the whole species, the other peculiar to the individual. By the perspirable matter which adheres to the ground, and of which the odour is diffused by moisture, the dog not only distinguishes a man from any other animal, but is able to trace his master through a crowd. The natural evacuations of plants, and of some few animals which feed by absorbents, are all by perspiration or exhaling vessels. The urine in quadrupeds is before emission collected in a vesicle, and thence carried off by the genital organ. In birds, and in a number of fishes, the ureters empty themselves into the rectum, and their contents are evacuated with the fæces.

The word *secretion* is sometimes employed for the matters secreted. In this sense there are various secretions. Besides the fæces, the urine, the sweat, and the vapour from the lungs, which are excrementitious, there are secretions which answer useful purposes in the system. Of these the most important and general are the bile, the saliva, the gastric juice, and the pancreatic, which assist in digestion; the lymph and the fat, which lubricate the parts; the mucus, which protects them from acid substances; the nervous fluid, which forms a very conspicuous link between body and mind; the seminal fluid, employed to propagate the species; and the lacteal, intended for some while to support the young after they emerge from the foetal state.

The SALIVA is a fluid that mixes with the food in mastication. In man it is secreted from the parotid, the sublingual, and submaxillary glands; it is watery and somewhat viscid; it retards and moderates fermentation: it has sometimes a tendency to form calculi. By these concretions it incrusts the teeth and sometimes obstructs the salivary ducts. It is the feat of the rabies canina.

The GASTRIC LIQUOR possesses a solvent power upon animal and vegetable substances, with little preference of affinity, as it varies according to the

nature of the aliment; "it is sometimes acid, (say Chaptal) sometimes insipid. Brugnatelli has found in the gastric juice of carnivorous birds and some others a disengaged acid, a resin, and an animal substance, united with a small quantity of common salt. The gastric juice of ruminating animals contains ammoniac, an extractive animal substance, and common salt. In our time the phosphoric acid has been found disengaged in the gastric juice" of the graminivorous kinds.

"The BILE secreted by the liver is glutinous or imperfectly fluid like oil, of a very bitter taste, a green colour inclining to yellow, and froths by agitation like the solution of soap. Its constituent principles are water, a spiritus rector, a coagulable lymph, a resinous oil, and soda. The resinous part differs from vegetable resins, because these do not form a soap with fixed alkalis, because they are more acid and inflammable, and because the animal resin melts at the temperature of 40°, and acquires a fluidity similar to that of fat. From fat it differs in not being soluble in cold alcohol, in which respect it approaches to spermaceti, which alcohol cannot dissolve without heat. Bile, like other soaps, removes spots of oil from clothes; when its passages are obstructed, the motion of the intestines becomes languid. It is neither alkaline nor highly putrescent. In putrefaction it yields something of a musky odour; the fossil alkali precipitates from it a green sediment; and with distilled vinegar it produces a mixture neither acrid nor sweet. Like saliva and urine, it has a tendency to form concretions called *biliary calculi* or *gall-stones*. They are sometimes found of an irregular texture, of a brown, black, yellowish, or greenish colour. They sometimes consist of transparent crystalline laminæ, like mica or talc, and are sometimes radiated from the centre to the circumference. They are always inflammable, of a more solid consistence than the generality of animal oils, and resemble spermaceti both in their solidity and crystallization; they are soluble in ardent spirit, when assisted by a moderate heat: the warm solution, when filtered, deposits by cooling a number of laminated white brilliant crystals, which have been compared to the salt of benzoin, the concrete acid of borax, and to spermaceti. Many of their characters indicate that they are a substance of the same nature with the last. Fourcroy found that the substance of which these crystals are composed exists not only in the crystallized gall-stones or bile; he observed it to a very considerable degree in a human liver which had been exposed to the air for several years, and had lost its volatile parts by putrefaction. He detected it also, in a saponaceous form, in bodies which had been many years buried under ground; and lately Dr Pearson of London has artificially converted the muscular fibre into a substance of a similar kind, highly inflammable, and resembling spermaceti.

The PANCREATIC JUICES resembles the saliva, and was examined in the 17th century, by De Graaf and Swammerdam. It has often been observed forming stony concretions.

The LYMPH consists chiefly of water; but, like the serous part of the blood, contains a substance which is coagulable by heat, by acids, and by

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spirit of wine. It is found in the cellular membrane, in the ventricles of the brain, in the pericardium, on the surface of the pleura, in the abdomen, in the bursæ mucosæ, and in the joints under the name of *synovia*, where it has more than an ordinary degree of viscosity, and of the lubricating quality. It is secreted chiefly by arteries.

Animal *FAT* is a substance of a nature similar to the fat oils in the vegetable kingdom. Its colour is usually white, sometimes yellow, and its taste insipid: Its confidence is various in different animals. In cetaceous animals and fishes it is nearly fluid; in carnivorous animals more fluid than in the frugivorous; in birds, finer, sweeter, more unctuous, and generally less solid than in quadrupeds. In the same animal it is more solid near the kidneys and under the skin than in the vicinity of the moveable viscera. As the animal grows old it becomes yellower and more solid; and in most animals is more copious in winter than in summer. In man and some other animals, it is collected in particular follicles of the cellular membrane, accumulated in great quantities in the groin, in the axilla, in the epiploon around the kidneys and blood-vessels: it is likewise secreted on the surface of the skin, which it protects from acrid substances. In cetaceous animals and fishes it is generally disposed in certain reservoirs such as the cavity of the cranium and the vertebrae; in some it is chiefly confined to the liver; in serpents, insects, and worms, to the viscera of the lower belly, where it is disposed in small lumps, and only a small quantity found on the muscles and under the skin: in frogs it is collected in certain bags which diverge from a common trunk, and seem like appendages to the ovaria and testes. In many places it seems to be secreted by organic pores, and under the surface of the skin by glands. It is accumulated from a diminution of perspiration, from the nature of the aliments, from morbid affection, and from idiosyncrasy. It is of the same nature as the fixed oil of plants.

It is a bad conductor of heat, and preserves the warmth of those regions where it is situated. It is more adhesive and less apt to evaporate than water, and is therefore a better lubricating fluid. When reabsorbed, it counteracts the saline impregnation; if too copious; and its nutritive power is as three to one when compared to that of the muscular fibre. These properties explain its uses around the several branches of the blood-vessels in those parts which require warmth, and which are exposed to motion. They likewise account for its being more copious in winter than in summer; and for its being found in great quantities in those animals which are constrained to a long abstinence. It forms sometimes scintomatous tumours, and contains the sebæic acid, which acts readily on lead, copper, and iron.

The *VEGETABLE FAT* is contained chiefly in the fruit; and is known by the names of *fat oil*, *sweet oil*, and *oil by expression*. It freezes in different degrees of heat, and varies according to the nature of the plant by which it is afforded.

The *MUCUS* is more viscid than the lymph, and is not coagulable by fire or alcohol. It is mild, not disposed to corruption, nor soluble in water. This secretion is performed by glands. *Mucus*

is found in the nose, through the whole length of the alimentary canal from the mouth to the anus, in the aspera arteria, in the bronchia, in the kidneys, ureters, bladder, and most of all in the urethra. It forms hard stony concretions sometimes in the lungs.

The *SEMINAL FLUID* has seldom been analyzed. It is heavier than water, soluble in urine, deliquesces in air and with heat; it hardens with the fixed alkali, and is not coagulable by alcohol. It contains a number of animalcules; and in the system in which it is secreted, it affects the passions, the manners, the voice, the taste of the muscles, the secretion of fat, and the growth of the hair. In many fishes this fluid is contained in a sort of bags. In most animals it is secreted by glands, called *testes*, and is accumulated in the vasa deferentia, or, where they exist, in the seminal vesicles. Mr Hunter shows that they secrete a particular fluid in all animals.

We are so little acquainted with the *NERVOUS FLUID*, that some have doubted of its existence. The discovery, however, of *GALVANI*, and the numerous experiments that have since been making on animal electricity, lead us to hope, that something yet may be known of its properties that will greatly illustrate the phenomena of the animal economy.

The *LACTEAL SECRETION* is generally confined to one sex, and is peculiar to the class of mammalia, though something similar may perhaps be secreted in the crops of pigeons.

We cannot enumerate all the different secretions in living bodies, without running into a tedious detail. The essential oils, the camphor, gums, the balsams, the resins, &c. are various secretions of the vegetable kingdom. (See these articles in their order.) Each species of plant and animal has generally some peculiar secretion; and this secretion in the individual has often some distinguishing quality, discoverable by taste, colour, or smell. These secretions have likewise each their particular uses.

The difference among the various secretions of the same system seem principally owing to a difference of stimulants, and to the various action, form, and irritable powers of the secretory organ. The passions often affect the secretions; and passion and medicine often affect one secretory organ and not another. It is therefore probable, that the organs of secretion, (and the smallest fibre is an organ of this kind) like the eye, the ear, and all the different organs of sense, are each affected in some measure by peculiar stimulants; as the stomach by hunger, the fauces by thirst, and the genital organs by venereal orgasmus. But however much the various fluids of living bodies may differ in appearance, chemical analysis has generally reduced them all to a water, a gluten, a salt, and an oil.

SECT. VII. Of INTEGUMENTATION.

ALL living bodies have one, two, or more integuments, prepared by secretory organs, as a defence against those injuries to which their situation is exposed. Of these integuments, some prevent the dissipation of the fluids, some resist acrid and corrosive substances, some are indigestible in the stomach, and some are seemingly incorruptible in

in the earth. By these properties, they preserve seeds and the ova of insects for a number of years, waiting the change of soil or of season. They protect both from the action of weak membranous stomachs, and make those animals who swallow them contribute likewise to their propagation. The gelatinous substance ejected by birds, and called the *tremella nifos*, or *starfall*, is found, by numerous experiments, to be a substance of this kind. (See NOSTOC and TREMELLA, N^o 3.) Several integuments are useful by their strength and hardness. The shells of the beetle are an excellent defence for the membranous wings which the creature folds up when it creeps into the earth: The shell of the snail lodges the intestines when the animal comes forth to search for its food, and furnishes a safe retreat for the body when any danger is threatened. Some animals, confined to their shells, can open and close them by a muscular power; and some shells, like the scales on fishes and insects, are disposed into plates, so as to be no hindrance to motion. Several insects, which live partly in the water, always compose a shell for themselves where it is needful. The usual materials are sand, straw, or mud, which they cement by a viscid secretion. The shells of most insects are corneous. Swammerdam found that cetaceous shells are composed of layers of indurated membranes, and that they are sometimes covered with a cuticle.

Many integuments are covered with feathers; others with hair or a thick down. Besides many other obvious uses of these coverings, they serve in general to repel insects; and, being bad conductors of heat, preserve a genial and necessary warmth. When the integuments are covered with prickles, they repel attacks by the strength of their points, or by the venom which they infuse, as the stings of nettles and the downs of some insects and plants. When moistened with a viscid secretion, they preserve the softness of the parts, prevent evaporation, resist acrimony, enable plants to destroy their enemies, and assist the snail in performing its motions.

Both plants and animals, but particularly the former, are often protected by effluvia from their integuments. This is the finer part of their volatile oil, always inflammable, and so subtle, that the continual emission of it from wood or flowers does not sensibly diminish their weight. To this odour it is owing, that the deadly nightshade, the henbane, hounds-tongue, and many others, are seen on almost every high road untouched by animals. The macinelle tree of the West Indies emits so very dangerous vapours, that those have died who have slept under its shade. The *lobelia longiflora* of America, produces a suffocating oppression in the breast of those who respire near it. The return of a periodical disorder has been attributed to the exhalation of the rhus toxicodendron. (See RHUS, N^o 7.) Every one knows, says Chaptal, the effect of musk and oriental saffron on certain persons. Ingenhoufz mentions a young lady whose death was occasioned by the smell of lilies; and Triller tells of another who died by the smell of violets. The selection of grasses by different animals, seems owing to the volatile aroma. But of all the vegetable exhalations known, those emitted

by the böhun-upas, or poison-tree of Java, are the most remarkable. For many miles round, no animal can breathe the air, no plant dares prep from the soil, the fishes die in the poisoned stream, and the birds that fly through its atmosphere, with despairing shrieks sink down lifeless.

The various colours of the integuments, are also a species of defence. "Caterpillars which feed on leaves (says DARWIN) are generally green; and earth-worms the colour of the earth. Butterflies which frequent flowers, are coloured like them. Small birds which frequent hedges, have greenish backs like the leaves, and light coloured bellies like the sky, and are hence less visible to the hawk who passes under them or over them. Those birds which are much among flowers, as the goldfinch, are furnished with vivid colours. The lark, partridge, and hare, are of the colour of dry vegetables, or earth on which they rest; frogs vary their colour with the mud of the streams which they frequent; and birds which live on trees are green. Fish which are generally suspended in the water, and swallows which frequent the air, have their backs the colour of the distant ground, and their bellies of the sky." The sphinx convolvuli resembles, in colour, the flower on which it rests; and among plants, the nectary and petals of the ophrys, and of some kinds of the delphinium, resemble, both in form and colour, the insects which plunder them, and thus sometimes escape from their enemies by having the appearance of being preoccupied. Many animals vary their colours with the seasons; and those which are of various colours in summer, in winter assume the colour of the snow.

But a change of colour is not the only change of the integuments. The tree annually casts its bark, the lobster his shell, the quadruped his hair, and sometimes his horns, the serpent his skin, and man himself renews the scales of the epidermis. These changes usually take place once a-year, often twice with respect to serpents, and oftener in toads, who devour the skins they throw off. But the integuments of ova and seeds, being the production of parental organs, neither are nor can be changed.

SECT. VIII. Of IRRITABILITY.

"IRRITABILITY (says the ingenious Dr Barclay) is that property of the living fibre by which it acts in consequence of stimulants. Being one of the great causes of motion in living bodies, no property has excited more wonder, been the cause of more error, or exhibits such a number of striking phenomena to the senses. These effects, however, have arisen rather from the nature of the stimulants than from any thing mysterious in irritability. Many of the stimulants by which this property in bodies is displayed, are often invisible, unknown, or unthought of; and men being conscious that a number of their motions proceed from a stimulant that is under the direction of a mental power, they readily conclude, from a sort of analogy, that every motion in plant and insect that seems to answer a useful purpose, and is caused by some invisible stimulant, is the consequence of *mind* directing from within; that irritability is in all cases the consequence of nerves, which are those organs

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which nature has employed in the animal kingdom to convey stimuli between body and mind. These singular conclusions have led to others that are less admissible."

The learned Dr HALLER, however, the first who made use of this term, gives a very different account of irritability, which he represents as a property, not of the *nerves*, but of the *muscular fibres*, totally distinct from, and independent of *sensibility*. See his account of it under the articles ANATOMY, § 190, and IRRITABILITY; with Dr MONRO's remarks upon it, and experiments in opposition to it, under ANATOMY, § 13—126. Dr ABRAHAM GIRTANNER gives a different account of irritability from both these great physicians, by borrowing the late Dr BROWN's account of his principle of EXCITABILITY, and adopting his very words; though he does not do him the justice to quote his *Elementa Medicinæ*, but substitutes the term *irritability for excitability*, throughout his whole description of this principle, although Dr BROWN's *Excitability* and Haller's *Irritability* are *totò calo* different.

But the ingenious Dr BARCLAY, after ridiculing the many absurd hypotheses advanced by physiologists on this and other branches of the science, makes the following, among many other learned observations on IRRITABILITY, which he considers as an effect of stimulants.

"Besides the other propensities which operate as stimulants in the system itself, the naturalist has found that light, heat, and moisture, in various degrees from absolute darkness, coldness, and dryness, act as stimulants upon living bodies: he has experienced that ELECTRICITY is a general agent, that several planets emit flames, and that some animals even give shocks resembling the electric. He has made it probable that it produces all the wonders of crystallization; and that the cause of chemical affinity, and of all the phenomena displayed by the magnet, if not simply a modification, is at least akin to it. In the male parts of plant and animal he has seen both the fluid and the pollen that gave the stimulus in generation, and are accompanied with so extraordinary changes in the system. He has found that much of the vegetable economy, and even the function of generation itself, as the development of the fecundating powder, and its application to the female organ, is partly carried on by wind, heat, and other such agents. He has reason to conjecture that many general agents in nature are yet *unknown*. By the help of chemistry, he has found out lately a considerable number, called *gases*, which are of the very highest importance in both the animal and vegetable economy, and which, like the *aromas* of plants, or the causes of contagion, produce their effects without being visible. It is only, too, of a late date that the celebrated Professor GALVANI of Bologna has excited so much curiosity through Europe, by the discovery of a certain stimulus that resides in the nerves, that passes along electric conductors, and which, by a certain application of metals, occasions a vivid flash in the eye, convulses the body of a living frog, and rouses the detached limbs into action. The change of colour in the integuments, according to different seasons and circumstances, though it answer a rational and useful purpose,

proceeds from a cause that does not seem to be very well known. Even many agents which are not visible, nor yet unknown, exert their influence in a secret manner, not obvious to the senses. It is generally known, that many singular movements of plants are owing to heat, many to light, and several to moisture. The barley-corn is often observed to creep on the ground by means of its awn, which dilates or contracts according to the different degrees of moisture. The wild oat, employed as an hygrometer, moves through the barn, travels through the fields, nor ceases to be changing its situation till its beard fall off, or till it meet with a soil where it may conveniently strike root. Agents, whether invisible, unknown, or unthought of, directed by regular and uniform laws under the great Author of nature, produce effects that indicate prescience, wisdom, and design; and, causing a transient or permanent propensity in the mental part, frequently controul, by resistless sway, the finite minds that reside in matter. These minds, in a living body, have generally been found accompanied with some system of nerves."

Our author, after some other remarks, says that, "In all animals the vigour of mind has some relation to the quantity of brain, and to the perfection of its organization; and that the acuteness of the different senses is generally proportioned to the quantity of nerve bestowed on their organs. Man has a greater proportion of grain than any other animal, but many an animal has a much greater proportion of nerves bestowed on different organs of sense. Many animals have therefore acuter senses than man; but man has a *greater vigour of mind* than any other animal on this globe."

"The brain of quadrupeds is somewhat similar to that of man, but proportionally smaller, and not so well organized. WALLIS has observed, that among animals, the structure of the cerebrum is more variable than that of the cerebellum; that the former generally furnishes nerves to the voluntary muscles, and the latter the medulla oblongata to the involuntary."

"The brain of birds is seemingly the reverse of the human brain; the cortical substance is the interior, and the ventricles are situated in the white part on the outside. In the brain of the bird there are no circumvolutions like the intestines, no fornx, corpus callosum, nor corpora striata."

"The brain of fishes is in many respects similar in its structure to the brain of birds. It is very small in proportion to their body, and is generally surrounded with an oily matter. In one genus of fishes, the gadus, Dr MONRO found spheroidal bodies between the dura and pia mater, and covering the greater part of the nerves like a coat of mail. The two senses seeing and hearing, in many fishes, are often acute. By laying one ear on the water, and striking the surface at some distance, this element is found to be a better conductor of sound than even the air."

"The reptile tribes have very little brain, and like the fishes have no ganglions upon their nerves. Most insects have no brain at all, but a nervous cord that is full of ganglions, that runs from one extremity to the other, and is denominated the spinal marrow. This knotty cord, however, is not marrow; the insect has nothing resembling

sembling a spine; and the situation of the cord in the animal, is often not along the back, but the breast. In the silk-worm, and most other insects, this cord is in contact with the alimentary canal; and the first ganglion, which is sometimes called *the brain*, though not in the head, divides, in order to give a passage to the stomach, and again unites in a second ganglion. Swammerdam found, in a species of snail, a brain with two lobes, in contact with the stomach, moveable by muscles, and without a fixed place in the body.

"The polypes exhibit no appearance of brain or of nerve, as in other animals. Their skin, however, is full of a number of small granular bodies, connected by a glaucous matter that resembles a thread. Like rows of beadstrings, they extend from one extremity to the other, and along the arms. Some nerves (adds our author) by frequent service and habit, become so obedient as to convey their stimuli to the muscles almost without the consciousness of mind. The motions excited by the stimuli of nerves, are in many cases exceedingly rapid. These may be seen in the wings of most insects, but are most noticed in dancers, tumblers, and apes, and all those animals that are exhibited for feats of agility.

"The motions excited in the body by the stimuli of nerves have often been so vigorous and prompt, as to have torn the muscle from the bone, and to have broken the bone itself. They often affect the organs of secretion, have often unbiassed the fabric of the system, occasioned death, and accounted for the miracles that have been ascribed to the power of fancy. The prompt motions of what have been named *sensitive plants*, seem owing to a different species of stimulants acting on extremely *irritable fibres*.

"In the animal kingdom, all muscles in the time of action, are observed to discharge a quantity of their blood; and those muscles which are naturally white are the *most irritable*. In all living bodies, the irritable power will cease to obey the action of a stimulant, if either long or violently applied. After exercise, therefore, the irritable fibre requires rest; after heat, cold; after waking, sleep, before it again becomes submissive to the action of the stimulant that overwhelmed it. This is the reason, that in plants and animals there are certain exertions and functions of the system that can only be continued at intervals and seasons. The natural stimuli of involuntary muscles continue to act, and the muscles to obey through life."

On the whole, the difference of irritability "arises from the structure of the organ itself, and from the manner in which the nerve is distributed through it. Other parts of the animal body, as the stomach, the fauces, and the genital organs, are thus affected by particular stimulants; and many animals, and even vegetables, may be affected in various manners, and by various stimulants, of which neither our feelings nor our senses can give intimation of any thing analogous."

SECT. IX. Of Motion.

"IRRITABILITY, (continues Dr Barclay,) is one of the great sources of motion in all living bodies; and this power is brought into action immediately by nerves or some other stimulants.

Locomotion here is principally considered; for although the kinds of internal motion employed in secretion and the other functions be as remarkable in the eye of the philosopher, they have not so generally attracted attention. Most animals are capable, by nature, of changing the place which their body occupies; for this reason, the irritable fibres, being formed into bundles, called *muscles*, are in most animals attached to bones, cartilages, or hard integuments, which they move as levers; these levers, with their muscles attached, are in most cases formed into wings, fins, or legs of various kinds, and are employed in performing the motions of flying, swimming, walking, leaping, and creeping. So very necessary, in the opinion of some of the ancients, was one or other of these instruments to progressive motion, that the movement of the serpent was often ascribed to a preternatural cause, was supposed to resemble the *inceffus deorum*, and procured to the animal one of the highest ranks among the emblematic kinds of divinities. Notwithstanding, however, the surprise that has been occasioned by its singular movement, the motion of snails, though not so rapid, is in many respects as extraordinary: they adhere by a certain viscid secretion; on dry ground this secretion forms a pavement over which they glide; and they proceed by the action of muscles, without bone, cartilage, or shell, to which the muscles can be attached.

"No animal walks without legs, or flies without wings; but there are many that swim without fins, and that leap and creep without legs. The rapidity of movement is not proportioned to the number of instruments that are employed: if the spout-fish be observed to move slowly with one leg, the sea-urchin moves still slower with many thousands; the oyster moves by squirting out water; the scallop by the jerk of its shell, and when in the water, it rises to the surface and sails before the wind.

"Many animals are formed by nature to fly, walk, leap, and swim: the fate of those is rather uncommon, whose muscles or feet are by nature attached to their integuments; the lobster is obliged to throw off its shell, and the caterpillar all its feet with the skin, and in that situation to remain stationary till it receive new instruments of motion. Besides the organs here mentioned, the form, the structure, and even the specific gravity of the body, as depending on the nature of the bones and muscles, or as varied by air, vesicles, and bubbles, with a great variety of other circumstances, are necessary to explain the different phenomena of locomotion.

"As to *vegetable motions*, they evidently depend on external agents. The motion of the wild oat has been mentioned; the wings of seeds fit them to be carried by the wind, their specific gravity to float in the water, and their legs or tentacula to adhere to bodies that are in motion: the singular motions which have been ascribed to *sleeping, waking, sensation, and volition*, in the vegetable kingdom, seem only the consequence of light, heat, moisture, and such stimulants, acting invisibly or with secret influence: the opening and closing of the meteoric flowers are always correspondent to the states of the atmosphere; and

and the opening and closing of the equinoctial and tropic flowers, to the light, the length, or shortness of the day.

"The principal intentions of locomotions are, to get food, to shun danger, to promote intercourse, and disperse the species."

SECT. X. *Of Habit.*

HABIT in physiology differs a little from its usual meaning. Dr Barclay uses it "to signify that principle in living bodies by which they accommodate themselves to circumstances, as if it were a different nature, and in many respects undergo a species of transformation."

So greatly do some vegetables accommodate themselves to different situations, to soil, to climate, and the state of cultivation, that naturalists, not accustomed to nice and accurate discriminations, have often mistaken the variations of the same plant for so many species. These variations may be daily seen by examining the plant as it grows on the mountains, in the valleys, in the garden, or in the fields; or by bringing it from a rude uncultivated state, when it sometimes lays aside its formidable prickles, and changes the colour and structure of its flowers.

Both in plants and animals the delicacy and vigour of the constitution are oftener the effects of habit and circumstance than original conformation. The varying colour of the integuments, and its changing with the seasons have been mentioned. We may add, that animals covered with a down or hair have it thick or thin, long or short, according to the exigencies of climate.

These changes on their bodies are accompanied with others, which are the causes of new tastes, new propensities, and new manners. At the Cape of Good Hope the ostrich sits on her eggs day and night like other birds; but in Senegal, where the heat is greater, she leaves them to the sun during the day. In those countries where provisions can be found during the greatest part of the year, the bee gradually loses the propensity of laying up stores for winter; and in those countries infested with monkeys, many birds, which in other climates build in bushes and the clefts of trees, suspend their nests upon slender twigs, and by this ingenious device elude the rapacity of their enemies. Man, from imitation, has a great number of habits peculiar to himself; and physical causes have ingeniously been assigned for the variety of his features and complexion. Few experiments have yet been made to show how far this accommodating principle may be extended in the different species of plants and animals.

It often happens among living bodies, that several characteristic distinctions, as the colour, the features, and a number of diseases that are originally the effects of circumstance, at last become so fixed in the system, that they become hereditary through some generations. With regard to animals these facts are well known; and as to vegetables, it has been observed, that the apple trees which are sent from Britain to New England blossom at first too early for the climate, and bear no fruit; and that it is only after some years that they conform to their situations. The permanency of these effects has often been the cause of

much confusion and error in philosophy; for the naturalist, mistaking the lasting, though temporary qualities of habit for the real and essential qualities of species, has often drawn conclusions from his experiments that have been contradicted by similar experiments in other circumstances. This is one of the obvious reasons why experiments exhibit so many inconsistencies, and why we are amused with such a multitude of visionary theories about the properties of living bodies. From not attending to the numerous circumstances that induce habits, and to that general accommodating principle in living bodies, many medical prescriptions are not only useless but mischievous.

The accommodating principle is one of the consequences of irritability. Its various effects arise from the actions of different stimulants on the irritant fibre; and the after duration of these effects, from the modifications of irritable fibres, become habitual, from the frequent repeated action of the stimulants. The design of this accommodating principle is to fit both the plant and the animal for a more extensive and a more varied range of existence.

SECT. XI. *Of Transformation.*

THE changes which plants and animals undergo from metamorphosis or transformation are more remarkably striking than any of those to which they are exposed from the variations of habit or the change of integuments. It has indeed been asserted, that these alterations consist in throwing off certain temporary coverings or envelopes; but there is here a want of precision in the ideas, and consequently a want of accuracy in the expression. The same persons who make this assertion inform us, that caterpillars change their skin, and many of them even several times, previous to the period of their transformation. Transformation, therefore, and a change of integuments, by their own concessions, are different things. The truth is, transformation frequently takes place independent of any change of integuments; and there is often a change of the integuments without transformation or any appearance of a new form: but a new form or change of appearance is always implied in metamorphosis or transformation. This new form is sometimes occasioned by a change of shape, consistency, and colour; as when the lobes of a seed are converted into seminal leaves. It is sometimes occasioned by a change of proportion among the parts. It is sometimes occasioned by the addition of new organs; as when the emmet receives wings, and the plume of the seed is fed by new roots striking into the ground; or it is occasioned by a change of both the form and the organs, and their mode of operation, as happens remarkably in some insects: for, though all living bodies, plants, and animals, undergo partial or general transformation, yet these changes are chiefly observable among insects. Many insects appear to consist of two distinct animal bodies, one within the other: the exterior, a creature of an ugly form, residing in the water or under the earth, breathing by gills, or sometimes by tracheæ projecting from the tail, possessing a voracious and grovelling appetite, and having a system of sanguiferous vessels that circulate

culate the blood towards the head. When its parts decay and fall off, the creature infolded succeeds in its stead: this often is an animal of a different form, generally lives in a different element, feeds on a different species of food, has different instruments of motion, different organs of sense, and different organs of respiration, and differently situated; and, being endowed with the parts of generation, inclines to ratify the sexual propensity, and produces an embryo which become like the first, and from which afterwards, in process of time, a creature is evolved similar to itself.

"If the embryo or egg be deposited on a leaf, the leaf is frequently observed to bend, to wrap in folds intended for the purpose, and to protect it from injuries and danger. If deposited in the body of an animal or plant, they accommodate themselves to its wants and necessities, and furnish a tumour which serves it for a nidus, and resides, like an uterus, supplies it with a nourishment; and if deposited in the body of an insect, the creature provides for the future destination of its young charge with all the tender care of a parent, and then dies."

These circumstances, added to the great variety of forms which insects assume, render it sometimes difficult to know who is the parent. We cannot, for instance, pronounce with certainty who is the true parent of the *GORDIUS*, known by the name of the *feta equina*, or hair eel. A set of experiments, which Dr BARCLAY once began with a view to throw some light on the subject, were interrupted unfortunately by an accident, and he has not since had leisure to resume them. He learned only, from a number of observations, that certain black beetles about the end of the summer months have the strongest propensity to run into the water, where they soon die; and that one or two, and sometimes three or more of those eels gradually drop from the beetle by the anus.

If the reader wish to be much acquainted with the manners and transformation of insects, he will derive information and pleasure from consulting the plates and memoirs of REAUMUR. If he wish to know their intimate structure, the laborious SWAMMERDAM can introduce him to a new and amusing species of anatomy. This last author had, before Reaumur, defined and described the kinds of transmutations among insects and some other animals. He has shown similar transmutations in plants; and, in plate 46 of his Book of Nature, has compared the frog and the clove July-flower under their six different forms. In all living bodies possessed of mind, the changes of form, as well as the change of habit and of age, are usually accompanied with new propensities, appetites, and passions.

Microscopic observations having demonstrated, that all the forms of the plant and animal existed previously in the seed or embryo, transformation must be owing entirely to the evolution of the different parts by means of nutrition. By means of transformation different aliments are peopled, the different seasons variously adorned, and animated nature wonderfully diversified without a multiplication of beings.

SECT. XII. Of GENERATION.

MANY of the causes which contribute to the formation of a living body have hitherto eluded human research; and perhaps are beyond human comprehension. Some philosophers, considering the extreme divisibility of matter, and learning from the microscope that transformation is but the development of certain parts that previously existed, have imagined that generation is somewhat analogous; that all regularly organized bodies received their form at the beginning; that the first of every genus and species contained by involution the numerous millions of succeeding generations; and that the union of the two sexes gives only a stimulus, and brings into view forms that had existed since the world began.

The absurdity of this hypothesis, which attempted to explain a thing that is *unknown*, by what must for ever remain *incomprehensible* to the human mind in its present state, is self-evident. Several other theories of generation are mentioned under ANATOMY. See also MIDWIFERY, Sect. II.

"But for a long time past (says Dr Barclay) the most rational physiologists have generally agreed, that the embryo is formed gradually and slowly in one or other of the two sexes, not by chemical combination and mixture, but by a system of organs, directed by laws and prompted by stimuli, with many of which we are yet unacquainted. From the great Hippocrates downwards to Aquapendens and Harvey, the credit of furnishing the foetal embryo was almost universally given to the females of oviparous animals. Among the viviparous, appearances were such, that the female was left to contest it with the male. At last the éclat of LEUWENHOEK's discoveries seemed to put an end to all doubts entertained upon the subject. He very plainly saw, through his microscope, that very great profusion of particles, that move to and fro with amazing rapidity in the male semen. (See ANIMALCULE, § 6.) Upon this he embraced the doctrine of HAMME, who had seen them before, and supposed from their motions that these particles were not only animalcules, but the principles or rudiments of that animal in whom they were formed, and that they were deposited in the uterus of the female only to be nourished and augmented in size.

"What raised suspicions against this theory were the numerous animalcules discoverable by the microscope in other fluids, and that vast profusion of young embryos in those cases, where never more than one or two arrive at maturity. It was an objection to it, that some females had been impregnated where the hymen remained unbroken, and where the vulva had been shut so closely as to leave only a passage for the urine. The male semen in these instances could have reached only the mouth of the uterus. It was another, that in all birds which have no intransient penis, the male semen is never sent farther than the mouth of the vulva, and that a single act of the male impregnates the whole eggs of the ovarium. A third objection is the pollen of flowers, which is not applied immediately to the seed, but often to a distant part of the vessel in which it is contained. A 4th may be taken from frogs and fishes, and all those

those animals whose eggs are impregnated after emission. And, lastly, Haller had observed the pullet completely formed in those eggs that were not fecundated.

"It is now pretty generally known, that the embryo does not commence its existence in the cavity of the uterus. De Graaf observed it on its passage down the Fallopian tube; he saw the place where it first began in the testicle of the female; and cases have occurred, where it has missed the Fallopian tube, where it has fallen into the abdomen, where the placenta has been formed, and the fœtus has grown among the viscera of the lower belly. See MIDWIFERY, Part I. Sect. VI.

"From these facts it has been concluded, notwithstanding some feeble objections, that the female testicles are real ovaries containing eggs; that these eggs are brought into action by the stimulating power of the male semen, which is sometimes thrown into the cavity of the uterus, sometimes applied only to its mouth, and sometimes sprinkled over the egg after emission. The principal difference, therefore, that occurs between oviparous and viviparous animals, considered as such, appears to be this; the former are accustomed to eject their embryo before it escapes from the membranes of the egg; the latter retain it long in the uterus until it acquires a considerable size, until the membranes can hold it no longer, and then eject it when the membranes are burst. A plant is oviparous when it yields seed; viviparous when it produces a gem, a bud, a bulb, or an eyed root. The membranes of the seed being removed, an incipient embryo is seen through the microscope.

"Some animals, according to the season, eject the embryo inclosed in its membranes, or retain it in the uterus till the membranes are broken. These are the animals which are said to be oviparous at one period, and viviparous at another. In some animals the sexual union is almost instantaneous. It constitutes nearly the business of life in the last stage of the ephemeron; and the male both of the frog and toad often continues on the back of the female not for hours and for days only, but for some weeks. Upon examination it has been found, that with his fore-feet he assists the female to protrude her eggs through the windings of the oviduct; and when they at last arrive at the anus, a species of the toad has been observed to draw them out with his hind legs. These animals were probably the first of the masculine gender who practised this art." Here Dr Barclay adds some humorous remarks, and concludes that "due honour has not been ascribed to the *obstetrical toad* for his discovery," by his imitators and successors the *Men-midwives*.

"Among all living bodies the two sexes are generally similar; and the male sex is generally distinguished by superior strength, beauty, and courage. The law, however, does not hold universally. The females of some carnivorous animals, who are left by the male to provide for their offspring, are larger, stronger, and more ferocious than he. Among some insects the male and female have no similarity even in form. The male of the glow-worm is a beetle, which flies in the dark, and is attracted not by the form, but the brilliancy of his mistress. The female gall insect is a large mass like a vegetable

excrescence, without locomotion; the male a small fly full of activity. The one is as unlike to the other as a Harpy to a Venus, and as disproportioned in point of bulk as a horse to an elephant.

"In many animals, the distinctions of sex are concealed in the body. When any of their parts are placed externally, or protruded occasionally, the male parts are usually prominent, and the female hollow, in order to receive them. In the acari, however, in many flies, and a few hornets, the case is reversed; the female parts suffer erection, and the male parts are open and hollow for their reception.

"The external situation of these parts is very much varied in different animals. In many worms it is near to the head. It is often upon the side of the snail; near to the breast in the female of the dragon-fly. It is at the extremity of the antennæ in the male spider. The vulva enters from the rectum in birds. Its common situation in most animals is well known. The male penis, where there is one, is sometimes found to enter the vulva, sometimes not; it is sometimes imperforated, sometimes forked, sometimes double, sometimes fleshy, sometimes bony, sometimes straight, sometimes winding spirally like a screw, sometimes with a knob, and sometimes with a point at its extremity, according to the kinds and varieties of animals.

"Few individuals have more than one sex. Many snails, however, are androgynous, and have two. In copulation they perform the office of two sexes, and are mutually impregnated. This circumstance has often led the sensualist to wish that he were a snail. With equal reason the epicure might wish to be one of those worms that imbibe by absorbents, and suck in nourishment by a thousand mouths. The organs employed may be more in number, the continuance of their function may be much longer, and yet the gratification may be less. The discreet beauty can afford a million of pleasures to her lover, which no snail or sensualist enjoys, and which prostitution can never yield.

"The male and female parts of the vegetable are sometimes both on the same flower, sometimes on separate flowers, and sometimes even on different plants of the same species. Besides the flower, another organ of generation is found in vegetables. This is the corona, from which the buds and branches proceed. It is a substance between the pith and the ligneous circles, and from which the diametral infertments diverge. See BOTANY, *Inf.*

"The corona is most conspicuous at the time when the seed is to be formed; and the testicles and ovaries of those animals which procreate only at stated periods are diminished in size, and sometimes disappear till the genial season."

With regard to the decision of the sex of the fœtus, our learned author thinks, that "wherever a male or female is produced, the stimulus of that particular sex, whatever was the cause, had, during the time of coition and conception, acquired the ascendancy over the parts that were to become sexual in the embryo. We cannot so readily answer the question, Why the offspring should possess the form and dispositions of one parent, and the sex of the other? In this case, the different stimuli may have acted differently on different parts; in the case of hermaphrodites, which are

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very common in the horse, the ass, the cow, and the sheep, the two parents seem to divide the form, the sex, and the dispositions, equally between them.

"The particular cause which excites the *orgasm* in the female organs is not ascertained. (See *ORGASM*.) That viscous fluid which young lascivious females eject when fond of the male, is chiefly a secretion from the glands of the vagina, the mouth of the uterus, and the neighbouring parts. In some respects it appears to be similar to those periodical discharges of females which frequently assume the erect posture; and these discharges being usually discontinued during the times of pregnancy and fucking, we must suppose that it is a portion of that fluid which nature has prepared for the use of the fœtus. These discharges are always a proof that the female has arrived at the age of puberty; that her ovary is now performing its office; and that she is disposed to propagate her kind. Whatever be the cause of the female *orgasmus*, it is often so strong as to counteract the natural effects of the femal fluid, and prevent impregnation. For this reason, few young and lascivious females conceive immediately after their marriage; and after coition, therefore, in cattle, it is sometimes a practice to beat the female, to plunge her in water, to weary her with running, and to use other means to prevent the return of the sexual desire.

"In man, and some of the nobler animals, the influence of fancy over the organs of generation is unquestionably great; but the extent and mode of its agency is not defined. Those who allow it so much power in impressing marks, and altering the form and colour of the fœtus, support their opinion rather by the number than the strength of their arguments. Many of the stories which they adduce as proofs are fabulous, and have brought the truth of the whole into question. The reports, however, of the French commissioners who were appointed to examine the nature of ANIMAL MAGNETISM, ought to deter the candid inquirer from drawing very hasty conclusions.* The queries of Fienus, in his small work, entitled *De Viribus Imaginationis Tractatus*, concerning the powers of this mental faculty, are important and curious, and might be of use in directing our researches; but they ought to be answered by accurate experiments, and not by acute metaphysical reasoning, and historical anecdotes that are ill authenticated.

"To prevent a confusion of genera and species, animals are generally restricted by propensity to their own kind; and the seminal fluids, besides, being various in various animals, cannot indiscriminately act as a stimulus on all female organs of generation. The changes of form induced by habit, which is owing itself to the influence of stimuli, will partly explain the manner in which the progeny is made to resemble the male. As the irritability of different parts is of different kinds, the stimulus will have a different effect on different organs; and in these cases, where either genera or species are mixed, the parts which are most and

least affected by the stimulus of the male will be obvious, in the shape and form of the offspring.

"We have hitherto spoken of generation as being performed by the temporary intercourse of two sexes; but the puceron is an instance where sexual distinctions are not always necessary." (See *PUCERON*.) "Even where they exist, they are daily dispensed with in the vegetable kingdom. Plants grow from the gem, the bulb, the leaf, or the root. They propagate by slips, by suckers, and by layers; and some of them, as the house leek and some grasses, multiply by spontaneous separation. In some animals the distinctions of sex are totally unknown. Infusory animalcules multiply their species by continual divisions and subdivisions of their own body; some polypes, by spontaneous separation, split transversely, some longitudinally, and some even send off shoots. When experiments have been made upon these animals, it has been discovered that the numerous and artificial divisions of their body or their head produce entire animals. Trembley learned that they might be engrafted upon one another, and produce monsters as wild and extravagant as poet or fabulist has ever dreamed of.

"The alimentary canal of some animals distributes nourishment through the whole body without the intervention of circulating vessels, and the vital organs of vegetables are generally diffused through the whole system. The case is the same in polypes as in plants. Every part is a miniature of the whole. It is found to have similar organs of digestion, of respiration, of circulation, and of generation. In perfect animals all the parts are more dependent on one another; the vital organs have distinct situations, and their powers are concentrated in distinct places. The arm of a man has no heart, lungs, stomach, or organs of generation; but the branch of a tree has as complete a system of organs as the trunk itself, and is as independent of that body from which it grew as the graft is independent of the stock. The several parts of perfect animals all contribute to make one whole; the several parts of a plant or polype, when united together, form only a congeries of living bodies. These facts contribute to explain the principal phenomena in this mode of propagation."

SECT. XIII. Of SLEEP.

"SLEEP (says Dr BARCLAY), is rather an affection of mind than a property of body, and is therefore more naturally a subject of metaphysics than of physiology. This affection is often induced by fatigue and exercise; and several persons, when they are weary, and no longer able to move their limbs, say they are exhausted. Though the word *exhausted*, in this expression, has seldom any precise meaning, it seems, however, to have been the means of suggesting a theory with regard to sleep. This theory supposes that sleep is occasioned by the exhaustion of irritability in the living system; but it seems to be founded on very limited and partial observations, or rather has been formed, like many others, prior to any observations at all, and afterwards tortured to account for the periodic

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* From this passage, as well as from some others which we have not quoted, Dr BARCLAY seems to put more faith in the doctrine of ANIMAL MAGNETISM, than most other modern British Physicians. See that article.

dical returns of sleep, for the almost unremitting drowsiness of infants, and for that listless lethargic inaction so often attendant on old age. When no exhaustion of irritability can well be supposed to have taken place, the propensity to sleep on many occasions becomes irresistible, from the effects of monotonous speaking, from stillness, darkness, or from the sameness of scenery around us; and when one stimulus, after long application, can rouse no more, a plain proof that the irritable principle is by no means exhausted.) another stimulus that is less powerful in ordinary cases is accompanied with excitement.

In all living bodies there is a continual waste and repair, or to speak with more precision and accuracy, one process of assimilation and another of dissolution constantly taking place in all the different parts of the system. This assimilation, when the body is healthy, predominates in youth; dissolution prevails in old age; and the two are nearly on a par during the vigour and meridian of life. A gentle and moderate exertion of mind and body will promote both. And, lastly, immoderate exertion in either respect, or any exertion that is not suited to our strength, habits, or period of life, prevents assimilation, hastens dissolution, and the means which nature employs to restore the balance is usually by inducing a state of sleep.

"When the balance is restored, and all the parts are again repaired for discharging their office, man awakes; but his waking period is of short duration, if appetite or passion do not engage him in some pursuit, if his mind be not occupied with some object, or if no stimuli be applied from without. This period seems chiefly intended for collecting food, and for being employed in those exertions which promote respiration, digestion, absorption, circulation, and secretion; while sleep, after the food is collected, assists nutrition, and promotes assimilation throughout the system. If what is the natural food of the species cannot be collected by the plant or animal in a short time, the period of sleep is proportionally restricted. If the food received be difficultly assimilated, the period of sleep is proportionally extended. If the food be not prepared for assimilation, the sleep is disturbed. If it be difficultly prepared by the organs, the active exertions are more vigorous; if easily prepared, they are more feeble. If it be collected during the day, the sleep is in the night; if it be collected during the night, the sleep takes place during the day, and all living bodies are directed by nature to select that time and species of food, which is most suited to their nature, their habits, their circumstances, and age.

"To favour nutrition, not only the body, but even the mind, must be allowed to indulge in rest. The child sleeps, and his mental faculties are under restraint, that those functions employed in nutrition may not be disturbed. The mental faculties are still feeble in a more advanced period of life; and the moderate exertions of mind and body which are natural to youth are chiefly such as favour the preparatory organs of the system, and promote growth; but the active and vigorous exertions of manhood, considered with respect to mind or to body, soon cause dissolution to preponderate in the scale, and old age becomes listless, inactive, and

drowsy, and the mind returns to childhood or dotage, because living bodies accommodate themselves to circumstances, and the prevailing dissolution is retarded by the frequent returns of rest and of sleep, which favour the assimilating power, counteract *re-absorption*, and oppose decay.

"For the best of reasons, the mind is not allowed to judge for itself when it is proper to eat, to drink, to sleep, to wake, and to propagate the species. These and the like are offices too important to be wholly intrusted with a being of so very limited intelligence. In all these cases it is therefore directed by certain propensities resulting from the body in consequence of stimuli or organic structure. Being often amused with thoughts and ideas on those objects which are purely intellectual, as the notes of memory, the forms of fancy, and its own operations in the way of reasoning; being invested with some little power in rousing, calming and regulating the passions, the desires, and appetites; and having the command of all the voluntary movements of the body, it sometimes neglects its charge of the system, destroys it sometimes by excessive indulgence, and sometimes employs it in accomplishing ends peculiarly its own.

"The natural returns of waking and sleeping may be altered, by the presence or absence of stimuli, and are curiously affected by the influence of habit. Although the commencement of one of these periods be changed, the commencement of the other will continue as before. If a person be accustomed to sleep precisely at 9 P. M. and to rise again at 6 A. M. though his sleep in the evening may now and then be kept off till 12, he will waken at 6; and though continued by darkness, quietness, or such-like causes, till the day be advanced, it will recommence in the evening at 9. The state of physiology is such at present, that we cannot assign any precise physical cause for the natural kinds of sleeping and waking, or for their regular periods of return.

"Plants too have been said to sleep. At the approach of night, many of them are observed to change their appearances very considerably, and sometimes even to such a degree as scarcely to be known for what they were before. During the night, many leaves, according to the nature of the plant, rise up, hang down, or fold themselves in various ways for the protection of the flowers, the buds, the fruits, or young stems; and many flowers, to escape a super-abundance of moisture, hang down their mouths towards the earth, or wrap themselves up in their calyxes. These phenomena are owing to stimuli acting from without; most of the motions are performed at the joints where the leaves and petals articulate with the stem. A period of rest is as necessary to plants as sleep is to animals; the rapid growth observable in plants during the night, is a strong proof that the organs employed in assimilation had been disturbed in discharging their functions during the day, when exposed to the actions of heat and light and of other stimulants."

Such is the ingenious Dr Barclay's theory of sleep in animals and plants. Without objecting to the former branch of it, or entering at all upon the latter, we shall quote, by way of contrast, the theory of the late eminent Dr JOHN BROWN, respecting

respecting the sleep of animals, which appears fully as plausible and consistent as any we have met with. To prevent any misunderstanding of the terms, we refer the reader to the articles, **BRUNONIAN SYSTEM, § 4. EXCITABILITY; § 1 —3. EXCITEMENT, § 2. STIMULUS, &c.**

"As death" (says the Doctor) "closes all the labours of life, so sleep closes those of every day; and, as the former is the consequence of a perfect extinction of the excitement, either from a complete exhaustion or extreme abundance of excitability; so the latter succeeds a diminution of excitement, during which the excitability is either, 1. only so far diminished that it can be accumulated again; or, 2. so abundant that the excess can be wasted; and, in each case, the excitement restored. Such is the nature of the excitability of animals, that it can neither be deficient nor over-abundant, without detriment; a deficiency producing indirect, and a super-abundance direct debility. And, as any exciting power, carried beyond its boundary, produces the former, and the withholding of any gives occasion to the latter; the same proposition holds good of the excessive or too sparing use of any of them, or of all. Sleep, then, is the effect of our actions during the day, at first giving always more and more excitement, afterwards less and less, in proportion to the continuance of their operation, but so as always to afford some excitement, till the person arrives at that state, where the degree of excitement necessary to the waking state no longer exists. Of this we have the most certain proof, in every day's experience, and in the common effect of all the exciting powers to produce sleep. Thus a certain degree of heat, food, drink, labour of body or mind, and passion or emotion, when their stimulus neither stops short of the proper point, nor goes beyond it, all give a disposition to sleep. This is the most salutary sleep. Premature, unseasonable, or morbid sleep, is produced by either indirect or direct debility. With respect to the former, an excessive operation of any one or more of the stimuli produces it, by acting in excess, and wasting the excitability, such as hurried drinking, &c. Of the directly debilitating powers, which produce the same effect, the want, or sparing application of the powers, which, by a due degree of stimulus, induce sleep, will induce a bad kind of it." *Elem. Med.* Vol. I. p. 266—270.

SECT. XIV. Of DEATH.

"DEATH is the cessation and total absence of the living principle in organized bodies. It is sometimes imitated by sleep and swoons; and a state of torpor in many instances can hardly be distinguished from it. Several moles, and a few animals, as the ears of blighted wheat, the feta equina, the wheel polype, and some snails, may be safely preserved as dried preparations, not for months only, but for years; and after irritability and sensation have been totally suspended, will return to life upon the proper application of moisture. A wheel polype was put by Fontana upon a piece of glass, and exposed during the whole summer to the noonday sun; another was exposed in a similar manner for a year and a half; and, after they

were like a piece of hardened glue, were restored to the use of all their functions by a few drops of water. Wherever there is death, there must therefore be likewise a partial or general decomposition of one or more of the vital organs. This decomposition takes place naturally in some living bodies after a few hours, in some after a few days; the life of others is extended to weeks; some are vigorous for months, or a season. Man has often seen more than four score; and the hardy oak survives the shock of two or three centuries. These observations conspire to show that there is a certain period of existence allotted by nature to every species of living bodies. In the individual, this period is sometimes abridged, and may be sometimes extended, by circumstances; yet there is a bound which it cannot pass, when the vital organs must be decomposed, and the system moulder with the dust. The time of incubation and the time of gestation are pretty much defined in every species, because the circumstances of the individual in these cases are generally similar; but, after emerging from the fetal state, the individuals are partly entrusted to their own organs and the chances of life, which are much varied; and hence the difference of their age.

"Life in general seems to be proportioned to the space occupied by that series of functions which the species is evidently destined to perform; and here sometimes the accommodating principle is singularly remarkable. As the period of decay is never seen to commence in the species till that of propagation be nearly elapsed, and as propagation in the lower tribes of plants and of animals is often the immediate harbinger of death; so many animals which have not propagated, indulged the propensity, nor become uneasy from the languor of desire, continue vigorous longer than ordinary, as if waiting for an opportunity to multiply their kind. And in the vegetable kingdom, where no individual is ever the victim of desire or passion, annuals, if prevented from flowering and seeding in their proper season, will live double, and sometimes triple the usual time, till these functions be somehow performed, and then die. But when all the organs are fully evolved, and have discharged or have continued for the usual time capable of discharging those offices for which they were intended; dissolution commences, the assimilating organs begin gradually to lose their tone, and the re-absorbents carry off more from the different parts than what they receive in the way of nutrition: the irritable fibre then becomes rigid; the membranes and cartilages begin to ossify; the bones grow harder; the smaller vessels collapse and disappear; the parts no longer are obedient, as before, to the action of stimulants; and death ensues.

"With regard to the period by which the life, the functions, and diseases of living bodies are so frequently regulated, and which periods may sometimes be varied, but not erased, the most prudent language that perhaps can be adopted, in the present state of physiological science, is this of the Divine, That the God who formed us hath numbered our days, determined our times, and prefabricated the limits of our existence."

The ingenious Dr BARCLAY concludes his
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Treatise on PHYSIOLOGY, with a TABLE giving a SUMMARY VIEW of the whole system, by way of supplement to that of M. D'AZYR above quoted, *Introd.* p. 500. The following TABLE exhibits the substance of the Doctor's SUMMARY VIEW, compressed within smaller bounds, and in a form more intelligible by ordinary readers:

I. PERSPIRATION. Some living bodies have respiratory organs. 1. Diffused through the system: 2. Confined to one place: 3. Situated externally: 4. Situated internally: 5. In the course of circulation: 6. Not in the course of circulation: 7. Within or without the course of circulation at pleasure: 8. Without tracheæ: 9. With tracheæ ramified through the system, where the respiratory organs are generally diffused: 10. With tracheæ not ramified through the system, where the respiratory organs are confined: 11. With tracheæ formed by rings: 12. With tracheæ formed by segments of rings on one side, and a membrane on the other: 13. With tracheæ formed by continuous rings, running spirally like a screw: 14. With tracheæ admitting air by one entrance: 15. With ditto admitting it by several entrances: 16. With tracheæ wholly concealed in the body: 17. With ditto partly projecting from it: 18. With tracheæ opening at the head: 19. With ditto opening at the opposite extremity: 20. With tracheæ opening on one side: 21. With ditto opening on both sides.

II. DIGESTION. i. Some living bodies have an alimentary canal. 1. Without teeth: 2. With teeth in the mouth: 3. With teeth in the stomach: 4. With stones or artificial teeth in the stomach: 5. With glands in the mouth for secreting a liquor to be mixed with the food: 6. With pouches in the mouth, where the food is kept and nourished: 7. With a sac or bag where the food is kept and moistened: 8. With a membranous stomach: 9. With a muscular stomach: 10. With an intermediate stomach: 11. Without a cæcum or blind gut: 12. With a cæcum: 13. With two cæca: 14. With 3 cæca: 15. With 4 cæca; all of which four last, as well as ruminating stomachs and their oesophagus, have anti-peristaltic motions: 16. With one entrance or mouth: 17. With many entrances by absorbents.

ii. **DIGESTION.** 1. Plants have many alimentary canals: 2. Some polypes have alimentary canals that branch through the body: 3. The alimentary canals of plants, of some polypes, and worms, distribute the fluids without the aid of a circulating system.

III. ABSORPTION. Performed, 1. By vessels beginning from the alimentary canal: 2. By vessels beginning from the cavities: 3. By vessels beginning from the surface: 4. By veins in the penis and placenta: 5. By re-absorbents originating from all parts of the system.

IV. CIRCULATION. 1. Some living bodies have no circulating system: 2. Some have a circulating system with one heart: 3. Some have a circulating system, with a heart for distributing the blood through the respiratory organs, and an artery for distributing it through the system: 4. Some have a circulating system with one heart for the respiratory organs, and one for the system, both in one capsule: 5. Some have a circulating system

with two hearts for the respiratory organs, and one for the system: 6. A circulating system with a pulmonary heart, for the respiratory organs in the course of circulation: 7. A circulating system, with a pulmonary heart, within or without the course of circulation: 8. A circulating system with a heart situated in the breast: 9. A circulating system with a heart near the head: 10. Ditto with a heart in the opposite extremity.

V. NUTRITION. The food is prepared, 1. By the Alimentary Canal: 2. By the Lacteals: 3. By the respiratory organs: 4. By the circulating system: 5. By the cellular membrane: 6. By the Glands: and, 7. By the several parts in which it becomes finally assimilated.

VI. SECRETION. Performed, 1. By vessels: 2. By exhaling vessels: 3. By excretory organs: 4. By organic pores: 5. By glands: And, 6. By all the parts of which the system is composed.

VII. INTEGUMENTATION. Some living bodies have integuments, which are, 1. Scaly: 2. Shelly: 3. Membranous: 4. Corneous: 5. Cretaceous: 6. Ligneous: 7. Covered with down: 8. Covered with hair: 9. Covered with prickles: 10. Covered with feathers: 11. Covered with a viscid matter: 12. Which change their colour: 13. Which change their covering: 14. Which are changed themselves.

VIII. IRRITABILITY. The irritable principle affected, 1. By stimulants invisible: 2. By stimulants unknown: 3. By stimulants unthought of: 4. By the nervous influence: 5. By Light: 6. By heat: 7. By moisture: 8. By Electricity: 9. By Salts: 10. By Gases: 11. By bodies that act mechanically.

IX. MOTION. Locomotion performed, 1. By legs: 2. By wings: 3. By fins: 4. By the tail: 5. By organs which fall not properly under these descriptions: 6. By the springiness of the body, or of some part of it: 7. By contrivances which fit living bodies for being moved by foreign agents.

X. HABIT accommodates with respect to, 1. Respiration: 2. Digestion: 3. Absorption: 4. Circulation: 5. Nutrition: 6. Secretion: 7. Integumentation: 8. Irritability: 9. Motion: 10. Transformation: 11. Generation: 12. Sleep: 13. Death: 14. Form: 15. Size: 16. Climate: 17. Propensity: 18. The healing of parts that are morbid: 19. The renewal of those that are broken off.

XI. TRANSFORMATION takes place, 1. By a change of proportion among the parts: 2. By a change of their form: 3. By throwing off old parts: 4. By an addition of new ones of a different use, structure, and form: 5. By a change of the whole form together: 6. By a change of qualities, propensities, and manners.

XII. GENERATION. Performed, 1. By the temporary union of two sexes: 2. By the spontaneous separation of parts: 3. By organs situated in the breast: 4. By organs in the side: 5. By organs near the head: 6. By organs in the opposite extremity: 7. By an intransit organ of the male, and a recipient organ of the female: 8. By an intransit organ of the female, and a recipient organ of the male: 9. By the stamina and pistils of flowers: 10. By the seminal secretion of the male thrown into the organs of the female: 11. By ditto sprinkled at the entrance of the female organs: 12. By ditto

ditto thrown upon them from a distance: 13. By ditto transported to them by the winds: 14. By ditto sprinkled on the embryo after emission: 15. By ditto dissolved in a fluid secreted by the female, before it can rightly perform its office: 16. By ditto dissolved in water: 17. By ditto dissolved sometimes in air, as in the diœcious plants, where it probably acts like an aroma. All living bodies are exhausted after performing the act of generation: and many of the inferior plants and animals begin immediately to sicken and decay.

XIII. SLEEP. Natural Sleep is occasioned, 1. By quietness: 2. By the absence of stimuli: 3. By the sameness of stimuli when long continued: 4. By deficient assimilation: 5. By deficient irritability, which is owing sometimes to the weakness, inattention, or confined powers of the mental principle.

XIV. DEATH happens naturally to some species of living bodies, 1. After hours: 2. After days: 3. After weeks: 4. After months: 5. After seasons: 6. After years: 7. Not till after centuries.

P H Y

* **PHYSY.** *n. f.* I suppose the same with *fusee*. See **FUSEE**.—Some watches have springs and *physes*, and others none. *Locke*.

PHYTEUMA, in botany, HORNED RAMPIONS, a genus of the monogynia order, belonging to the pentandria class of plants; and in the natural method, ranking under the 29th order, *Campanaceæ*.

* **PHYTIVOROUS.** *adj.* [*φυτορ* and *voros*, Lat.] That eats grass or any vegetable.—Hairy animals, with only two large foreteeth, are all *phytivorous*. *Ray*.

* **PHYTOGRAPHY.** *n. f.* [*φυτορ* and *γραφω*.] A description of plants.

PHYTOLACCA, POREWEED, or AMERICAN NIGHTSHADE, in botany, a genus of the decagynia order, belonging to the decandria class of plants; and in the natural method, ranking in the 54th order, *Miscellaneæ*. It grows naturally in Virginia. It has a thick, fleshy, perennial root, divided into several parts as large as middling parsnips. From this rise many purplish, herbaceous stalks, about an inch thick, and 6 or 7 feet long, which break into many branches, irregularly set with large, oval, sharp-pointed leaves, supported on short foot-stalks. These, at first, are of a fresh green colour, but as they grow old they turn reddish. At the joints and divisions of the branches come forth long bunches of small bluish-coloured flowers, consisting of 5 concave petals each, surrounding 10 stamina and 10 styles. These are succeeded by round depressed berries, having 10 cells, each containing a single smooth seed. In Virginia and other parts of America the inhabitants boil the leaves, and eat them in the manner of spinach. They are said to have an anodyne quality, and the juice of the root is violently cathartic. The stems, when boiled, are as good as asparagus. The Portuguese had formerly a trick of mixing the juice of the berries with their red wines, to give them a deeper colour; but as it was found to debase the flavour, and to make the wine deleterious, the king of Portugal ordered all the stems to be cut down yearly before they produced flowers, to prevent any further adulteration. The same practice was common in France till it was prohibited by an edict of Lewis XV, and Lewis XVI. under pain of death. This plant has been said to cure cancers.

(1.) * **PHYTOLOGY.** *n. f.* [*φυτορ* and *λογω*.] The doctrine of plants; botanical discourse.

(2.) **PHYTOLOGY.** See **BOTANY**, and **MATERIA MEDICA**.

P L A

PHYTON, a general of the people of Rhegium, against Dionysius, the tyrant of Sicily. He was taken by the enemy, and tortured, and his son was thrown into the sea; A. A. C. 387. See **SYRACUSE**.

PHYXIUM, an ancient town of Elis.

PI, a town of China, in Setchuen of 3d rank.

PIA, or **PIALIA**, festivals instituted in honour of Adrian, by the emperor Antonius Pius. They were celebrated at Puteoli on the 2d year of the Olympiads.

PIABA, in ichthyology, is a small fresh water fish, caught in all the rivers and brooks in the Brazils, and in some other parts of America. It is about the bigness of the common minnow; is well tasted, and much esteemed by the natives.

PIABUCU, in ichthyology, an American fish, eaten in many places by the natives. It is ravenous, and so greedy of blood, that if a person goes into the water with a wound in any part of his body, the piabucu will make up to it to suck the blood. It seldom exceeds 4 inches in length.

PIACENZA. See **PLACENTIA**.

* **PIACLE.** *n. f.* [*piaculum*, Lat.] An enormous crime. A word not used.—To tear the paps that gave them suck, can there be a greater *piacle* against nature? *Houel's Engl. Tears*.

* **PIACULAR.** } *adj.* [*piacularis* from *piacu-*

* **PIACULOUS.** } *lum*, Lat.] 1. Expiatory; having the power to atone. 2. Such as requires expiation.—It was *piaculous* unto the Romans to pair their nails upon the nudities, *Brown*. 3. Criminal; atrociously bad.—While we think it so *piaculous* to go beyond the ancients, we must necessarily come short of genuine antiquity and truth.

PIADELLA, a town of Italy, in the dep. of the Lario, district of Como, and late duchy of Milan; 20 miles N. of Como, and 5 S. of Gravedona.

To **PIAF.** *v. n.* } in horsemanship. See

PIAFING. *part. n. f.* } **HORSEMANSHIP**, *Self*.

VI.

PIALIA. See **PIA**.

(1.) * **PIA MATER.** *n. f.* [Lat.] A thin and delicate membrane, which lies under the dura mater, and covers immediately the substance of the brain.

(2.) **PIA MATER.** See **ANATOMY**, *Index*.

* **PIANET.** *n. f.* [*pius varius*.] 1. A bird; the lesser wood-pecker. *Bailey*. 2. The magpie. This name is retained in Scotland.

PIANISSIMO.

PIANISSIMO, *adv.* in music, very soft.

PIANKASHAWS, a nation of N. American Indians, who reside in the North-Western Territory, on the banks of the Wabash. They have 600 warriors.

(1.) **PIANO**, *adv.* [Italian.] in music, softly.

(2.) **PIANO FORTE**, *n. f.* an improved species of harpsichord. The only difference between a harpsichord and a Piano Forte is that the keys of the latter are struck by mallets covered with leather, and the former by quills.

PIANOSA, or } an island in the Tuscan sea,
PIANOZA, } near the coast of Etruria, 6 miles SW. of Elba; anciently called **PLUNATIA**, and used as a place of exile. It is level and low, whence the name. Lon. 10. 34. E. Lat. 42. 46. N.

PIANRIAS, a nation of N. American Indians, who reside in the North-Western Territory, on the banks of the Illinois. They have 400 warriors.

PIAST. See **PIASTUS**.

(1.) * **PIASTER** *n. f.* [*piastre*, Italian.] An Italian coin, about five shillings sterling in value. *Dis.*

(2.) **PIASTER**, or } See **MONEY**, § 9; under
 (2.) **PIASTRE**, } **SPAIN**.

PIASTUS, or **PIAST**, a native of Poland, the son of Cossico, or Kossufko, a citizen of Cruswitz, who, from the station of a wheel-wright, was raised to the throne of the duchy or kingdom of Poland, about A. D. 830, on the death of Popiel II. Different fabulous legends are told, by the cation of Cracow, Guagnini, and other historians of that age, of the cause of this promotion; such as that, in the midst of a famine, he had entertained two angels, or at least two pilgrims, very hospitably; who, in return, enabled him miraculously to supply the wants of the people; from all which we may gather, that Piast had become popular by his liberality in a time of scarcity. All historians agree, that he governed with so much justice and clemency, that the Poles had no reason to regret their choice. He died at Gnesna, whither he had removed the court from Cruswitz, and was succeeded by his son, Ziemowitus.

PIATTL. See **PATTI**, N° 1.

PIAVA, or } a river of Tirol and Maritime
PIAVE, } Austria, which rises in the Tirol-
 etc mountains, near the Julian Alps, crosses the countries of Feltrino, Friuli, and Trevisana, and falls into the Adriatic, 16 miles NE. of Venice. Near its banks, Bonaparte defeated a party of the Austrians in August 1796, and took 1000 prisoners.

(1.) * **PIAZZA** *n. f.* [Italian.] A walk under a roof supported by pillars.—He stood under the piazza. *Arbutnot, and Pope's Scribblers.*

(2.) **PIAZZA**, in building, popularly called *piacbe*, an Italian name for a portico, or covered walk. The word literally signifies a broad open place or square; whence it also became applied to the walks or porticoes around them.

(3.) **PIAZZA**, Jérôme Bartholomew, an Italian, originally a Roman Catholic, a Dominican Friar, and a judge in the Inquisition, but turning Protestant, he came to England, and taught Italian and French at Cambridge. He published *An Account of the Inquisition and its proceedings*, as *prac-*

tised in Italy: With an Extract out of an Authentic Book of the Roman Legends: Lond. 1722. He married a French Protestant, by whom he had 3 children; and died at Cambridge in 1745; with a good character.

PIBROCH, says the late Dr James Beattie, is a species of tune peculiar to the Highlands and Western Isles of Scotland. It is performed on a bagpipe, and differs totally from all other music. Its rhyme is so irregular, and its notes, especially in the quick movement, so mixed and huddled together, that a stranger finds it almost impossible to reconcile his ear to it, so as to perceive its modulation. Some of these pibrochs, being intended to represent a battle, begin with a grave motion resembling a march, then gradually quicken into the onset; run off with noisy confusion and turbulent rapidity, to imitate the conflict and pursuit; then swell into a few flourishes of triumphant joy; and perhaps close with the wild and slow wailings of a funeral procession. See **MUSIC**, § 15.

(1.) **PIC**, a navigable river of N. America, which runs into Lake Superior: in Lon. 89° 41' 6" W. and Lat. 48° 36' 11" N. The chief portage is in Lat. 48. 41.

(2.) **PIC DEL ALVERDI**, or } a high island in the

(3.) **PIC DE L'ETOIL**, } the form of a sugar loaf, lying N. of Aurora Island, discovered by Bougainville in May 1768.

(1.) **PICA**, or **PYE**, in ecclesiastical matters, had formerly the same sense as **ORDINAL**, meaning a table or directory, pointing out the order in which the devotional services appointed for different occasions were to be performed. It is derived from Π, a contraction of *πικε*, a table; or from *litera pictata*, a great or black letter at the beginning of a new order in the prayers. It was used in a similar sense by officers of civil courts, who called their catalogues or indexes of things contained in the rolls of their courts, the *pyes*.

(2.) * **PICA** *n. f.* Among printers, a particular size of their types or letters. It is probably so called from having been first used among us in printing the *pye*, an old book of liturgy.

(3.) **PICA**, in medicine, a depravation of appetite, which makes the patient long for what is unfit for food, or incapable of nourishing; as chalk, ashes, coals, plaster, lime, &c. See **MEDICINE**, *Index*.

(4.) **PICA**, in ornithology. See **CORVUS**, N° 12.

(5.) **PICA MARINA**, in ornithology. See **ALCA**, N° 5; and **HAMATOPUS**.

PICÆ, **PICES**, in ornithology, the 2d order of birds in the Linnæan System. They are thus characterised by Mr Kerr:—"The bill is sharp and convex on its upper surface. The legs are short, strongish, and of different kinds, some climbers, and some fitted for walking, i. e. having no back toe. The body is firmly constructed. The birds of this order live on various kinds of food, and are mostly unfit for food. They pair, build their nests on trees, and the male feeds the female during incubation." (*Animal Kingdom*, vol. I. p. 418.) There are 30 genera. See **ORNITHOLOGY**, *Sci.* IV.

PICARA, a large province of South America,

in New Granada, bounded on the east by the Andes.

(1.) PICARD, a native of the Netherlands, who founded the sect, called *Picards*. See PICARDS.

(2.) PICARD, John, an able mathematician, one of the most learned astronomers of the 17th century, born at Fleche. He became priest and prior of Killie, in Anjou. Going to Paris, he was, in 1666, appointed astronomer to the Academy of Sciences. In 1671, he was sent, by order of the king, to the castle of Uraniburg, built by Tycho Brahe in Denmark, to make astronomical observations there; and from thence he brought the original MSS. written by Tycho Brahe, which are the more valuable, as they differ in many places from the printed copies, and contain a book more than has yet appeared. He made important discoveries in astronomy; and was the first who travelled through France, to measure a degree of the meridian. His works are, 1. A treatise on levelling. 2. *Elements of dioptrica*. 3. *Experimento circa aquas effluentes*. 4. *De mensuris*. 5. *De mensura liquidarum et aridorum*. 6. A voyage to Uraniburg, or astronomical observations made in Denmark. 7. Astronomical observations made in several parts of France, &c. These, and some other of his works, which are much esteemed, are in the Memoirs of the Academy of Sciences; vols. 6. and 7.

PICARDS, a religious sect which arose in Bohemia in the 15th century. PICARD, the author of this sect, drew after him a number of men and women, pretending he would restore them to the primitive state of innocence wherein man was created; and accordingly he assumed the title of the *New Adam*. Under this pretence he indulged his followers in all kinds of impurity; saying that therein consisted the liberty of the sons of God; and that all those not of their sect were in bondage. He first published his opinions in Germany and the Netherlands, and persuaded many people to go naked, whom he named ADAMITES. After this, he seized on an island in the river Lausnecz, some leagues from Thabor, the head quarters of Zisca, where he fixed himself and his followers. His women were common, but none were allowed to enjoy them without his permission: so that when any man desired a particular woman, he carried her to Picard, who gave him leave in these words, *Go, increase, multiply, and replenish the earth*. At length, however, Zisca, general of the Hussites, (famous for his victories over the emperor Sigismund,) hurt at their abominations, marched against them, made himself master of their island, and put them all to death except two; whom he spared, that he might learn their doctrine. Such is the account which various writers, relying on the authorities of Eneas Sylvius and Varillas, have given of the Picards, who appear to have been a party of the VAUDOIS, that fled from persecution in their own country, and sought refuge in Bohemia. But it is highly probable that the whole is a calumny invented to disgrace the Picards, because they deserted the communion of the church of Rome. Ladius informs us, that Picard, with 40 other persons, besides women and children, settled in

Bohemia in 1418. Balbinus the Jesuit, in his *Epitome Rerum Bohemicarum*, lib. ii. gives a similar account, and charges on the Picards none of the crimes ascribed to them by Sylvius. Schlesta, secretary of Ladislaus, king of Bohemia, in his letters to Erasmus, gives a particular account of the Picards, wherein he represents their principles as no other than those of the Vaudois; and M. de Beausobre has shown that they were both of the same sect, though under different denominations. The Vaudois were settled in Bohemia in 1178, where some of them adopted the rites of the Greek, and others those of the Latin church. On the commencement of the national troubles in Bohemia, on account of the opposition to the papal power, (see MORAVIANS,) the Picards publicly avowed their religious opinions; and formed a considerable body in an island by the river Lausnecz, in the district of Bechin, and recurring to arms, were defeated by Zisca.

PICARDY, a ci-devant province of France, bounded on the N. by Hainault, Artois, and the Straits of Calais; on the E. by Champagne; on the S. by the Isle of France; and on the W. by Normandy and the English Channel. The name is not more ancient than the 14th century. It is long and narrow, being usually compared to a bent arm; and in this figure is nearly 150 miles long, but not above 40 broad, and in many places not above 20. It is generally level, and produces wine, fruit of all kinds, plenty of corn, and great quantities of hay; but wood being scarce, most of the inhabitants burn turf. They have, however, some pit coal. It was united to the crown of France in the year 1643; and contains about 533,000 citizens. Its principal rivers are the Somme, Oise, Canche, Lanthie, Lys, Aa, Scrape, and the Deule. Its situation on the sea coast, its many navigable rivers and canals, with the industry of the inhabitants, render it the seat of a flourishing trade. In it are made beautiful silk stuffs, woollen stuffs, coarse linen, lawn, and soap; it also carries on a large trade in corn and pit coal. The fisheries on this coast are also very advantageous. This province was divided into Upper, Middle, and Lower Picardy; but now forms the department of the SOMME, and part of those of the AISNE, and the STRAITS OF CALAIS. AMIENS is the capital.

* PICAROON, *n. f.* [from *picare*, Italian.] A robber; a plunderer.—Corfica and Majorca in all wars have been the nests of *picaroons*. *Temple's Miscellanies*.

PICART, Bernard, a celebrated engraver, son of Stephen Picart, also a famous engraver, was born at Paris in 1673. He learned the elements of his art from his father, and studied architecture and perspective under Sebastian le Clerc. As he embraced the reformed religion, he settled in Holland, where his genius produced those masterpieces which made him esteemed the most ingenious artist of his age. A multitude of books are embellished with plates of his engraving. He died in 1733.

PICAWEE, an Indian town of the United States, in the North Western Territory, on the Great Miami, 75 miles above its mouth; where

it

it is only 30 yards broad, though navigable by loaded batteaux 50 miles higher up.

* **PICCAGE.** *n. f.* [*piccagium*, low Lat.] Money paid at fairs for breaking ground for booths. *Ainsworth.*

(1.) **PICCOLOMNI**, Æneas Sylvius. See **Pius II.**

(2.) **PICCOLOMINI**, Alexander, Abp. of Patras, was born at Sienna, about 1508, of an illustrious and ancient family, originally from Rome. He composed for the theatre, and was equally distinguished for genius and virtue. His charity was very great, and was much exerted in favour of men of letters. He wrote many works in Italian. The principal are, 1. Various Dramatic Pieces. 2. A Treatise on the Sphere. 3. A Theory of the Planets. 4. A Translation of Aristotle's Art of Rhetoric and Poetry, in 4to. 5. A System of Morality; Venice, 1575, in 4to; translated into French by Peter de Larivey, in 4to; Paris, 1581. He was the first who wrote in the Italian language upon philosophical subjects. He died at Sienna, 12th March, 1578, aged 70. A catalogue of his works may be seen in the *Typographical Dictionary*.

(3.) **PICCOLOMINI**, Francis, of the same family, was born in 1530, and taught philosophy with success, for 22 years, in the most celebrated universities of Italy, and afterwards retired to Sienna, where he died, in 1604, aged 84. His works are, 1. Commentaries upon Aristotle; Mentz, 1608, 4to. 2. *Universa Philosophia de Moribus*; Venice, 1583, fol. He laboured to revive the doctrine of Plato, and imitated his manners. He had for his rival the famous James Zabarella, whom he excelled in facility of expression and elegance of language; but to whom he was much inferior in point of argument.

(4.) **PICCOLOMINI**, James, whose proper name was *Ammanati*, took that of *Piccolomini*, in honour of his patron Pius II. He was born near Lucca, in 1422. He became Bp. of Massa, afterwards of Fiescati; a cardinal in 1461, under the title of *de Pavia*; and died in 1479, aged 57, of an indigestion of figs. He left 8000 pistoles in the banker's hands, which Pope Sixtus IV. claimed, and of which he gave a part to the Hospital of the Holy Ghost. His works, which consist of some Letters, and a History of his own time, were printed at Milan, in 1521, in folio. His history, entitled *Commentaries*, commences the 18th June, 1464, and ends the 6th Dec. 1469. They are a Sequel of Pope Pius II.'s Commentaries, which end with 1463.

(5.) **PICCOLOMINI**, Octavius, of Arragon, duke of Amalfi, prince of the empire, an imperial general, and knight of the Golden Fleece, was born in 1599. He first bore arms among the Spanish troops in Italy. He afterwards served under Ferdinand II. who sent him to the relief of Bohemia, and gave him the command of the imperial troops in 1634. He signalized himself at the battle of Nortlingue, and made Marfh. de Chatillon raise the siege of St Omer. He defeated the Marquis Feniqueres in 1639; nor did the loss of the battle of Wolfenbuttel, in 1651, impair his glory. He died on the 10th Aug. 1656, aged 57, with the

character of an active general. The celebrated Caprara was his nephew.

PICENI, or } the ancient inhabitants of **PICE-**
PICENTES. } **NUM**, (*Cicero, Livy.*) who were originally a colony of Sabines. They were different from the **PICENTINI**, on the Tuscan sea, though called so by the Greeks; but Ptolemy calls them *Piceni*, as does also Pliny. Their territory at this day is supposed to form the greatest part of the March of Ancona. *Cleverius.*

PICENTIA, the capital of the **PICENTINI**, who inhabited the **AGER PICENTINUS**. (*Strabo, Pliny.*)

PICENTINI, an ancient people of Italy, who inhabited the **AGER PICENTINUS**. The Greeks commonly confound the *Picenti* and *Picentes*, but the Romans distinguish them. The former had only two towns, named *Silernum* and *Picentia*; the situation of both uncertain; only Pliny says the latter stood within land, at some distance from the sea. Now thought to be *Bicenza* (*Holstentius*), in the Principato Citra of Naples.

PICENTINUS AGER, an ancient district of Italy, on the Tuscan Sea, extending from the *Promontorium Minervæ*, the S. boundary of Campania on the coast, to the Silarus, the N. boundary of Lucania, reaching within land as far as the Samnites and Hirpini.

PICENTIUM AGER, } a territory of Italy, ly-
PICENUM, or } ing to the E. of Um-
PICENUS AGER. } bria, from the Apen-
nine to the Adriatic; on the coast, extending from the river Aesis on the N. as far as the *Pratutani* to the S. In the Upper or N. part of their territory, the Umbri excluded them from the Apennine, as far as Camerinum; but in the lower or southern part, they extended from the Adriatic to the Apennine. It was very fertile, and very populous. *Cæs. Plin. Florus, Cic. Call. Liv. Tac. Varro.* See **AGER PICENUS**.

PICHFORD, or **PITCHFORD**, a town of Salop, on the SE. side of Shrewsbury, near Condover. It is noted for a spring of pitchy water (whence its name), on the top of which there always flows a sort of liquid bitumen. Over most of the coal pits hereabouts, there lies a stratum of blackish rock; of which, by boiling and grinding, they make pitch and tar, and also distil an oil from it.

PICHINCHA, a mountain of Peru in Quito, in the province of Truxillo, famous for its great height, which is estimated at 2432 toises above the level of the sea. It is, however, 1278 yards lower than the perpendicular height of Cotopaxi, and was formerly a volcano, but the crater on one of its sides is now covered with sand and calcined matter; so that at present neither smoke nor fire issue from it. When Don George Juan and Don Antonio de Ulloa were stationed on it for the purpose of making astronomical observations, they found the cold on the top of this mountain extremely intense, the wind violent, and they were frequently involved in so thick a fog, or cloud, that an object at 6 or 8 paces distance was scarcely discernible. The air grew clear, by the clouds moving nearer to the earth, and on all sides surrounding the mountain to a vast distance, representing the sea with the moun-

tain

tain standing like an island in the centre. When that happened, they heard the dreadful noise of the tempests that discharged themselves on Quito and the neighbouring country. They saw the lightning issuing from the clouds, and heard the thunder roll far beneath them. While the lower parts were involved in tempests of thunder and rain, they enjoyed a delightful serenity; the wind was abated, the sky clear, and the enlivening rays of the sun moderated the severity of the cold. But when the clouds rose, their thickness rendered respiration difficult: snow and hail fell continually, and the wind returned with all its violence; so that it was impossible entirely to overcome the fear of being, together with their hut, blown down the precipice on whose edge it was built, or of being buried in it by the constant accumulation of ice and snow. Their fears were likewise increased by the fall of enormous fragments of rocks. Though the smallest crevice visible in their hut was stopped, the wind was so piercing that it penetrated through; and though the hut was small, crowded with inhabitants, and had several lamps constantly burning, the cold was so great, that each individual was obliged to have a chafing dish of coals, and several men were constantly employed every morning to remove the snow which fell in the night. By the severities of such a climate, their feet were swelled, and so tender, that walking was attended with extreme pain, their hands covered with chilblains, and their lips so swelled and chapt, that every motion in speaking drew blood.

PICIGITHONE. See PIZZIGHITONE.

PICIOTTI, a river of Naples, which runs into the sea, 15 miles SE. of Reggio, in Calabria Ultra.

* PICK. *n. f.* [*piquer*, French.] A sharp pointed iron tool.—What the miners call chert and whern, the stone-cutters nicomia, is so hard, that the *picks* will not touch it. Woodward.

(1.) * To PICK. *v. a.* [*picken*, Dutch.] 1. To cull; to choose; to select; to glean; to gather here and there. It has commonly *out* after it when it implies selection, and *up* when it means casual occurrence.—

This fellow *picks up* wit as pigeons peas.

Shak.

He hath *pick'd out* an act,

Under whose heavy sense your brother's life
Falls into forfeit.

Shak.

Out of this silence yet I *pick'd* a welcome.

Shak.

—When men are ingenious in *picking out* circumstances of contempt, they do kindle their anger. Bacon.—He should out of these his enemies distresses *pick* some fit occasion of advantage. Knolles's History.—

They must *pick me out* with shackles tir'd,
To make them sport with blind activity.

Milton.

What made thee *pick* and chuse her out?

Hudib.

—Men that have been *picked up* and relieved out of starving necessities, afterwards conspire against their patrons. L'Estrange.—He'd make a shift to *pick it up*. L'Estrange.—A painter would not be much commended, who should *pick out* this ca-

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vern from the whole *Æneida*. Dryden.—Imitate the bees, who *pick* from every flower that which they find most proper to make honey. Dryden.—He that is nourished by the acorns he *picked up* under an oak in the wood, has appropriated them to himself. Locke.—He asked his friends about him, where they had *picked up* such a blockhead. Spect.—The will may *pick* and chuse among these objects. Chryse.—

Deep thro' a miry lane she *pick'd* her way.

Goy.

—Thus much he may be able to *pick out*, and willing to transfer into his new history. Swift.—

Heav'n, when it strives to polish all it can,

Its last, best work, but forms a softer man,

Picks from each sex, to make the fav'rite blest;

Your love of pleasure, our desire of rest. Pope.

2. To take up; to gather; to find industriously.

—You owe me money, Sir John; and now you

pick a quarrel to beguile me of it. Shak.—The

king did this, to *pick* a quarrel to put him to

death. Bacon.—There's not one circumstance in

nature, but they shall find matters to *pick* a quar-

rel at. L'Estrange.—Pick the very refuse of those

harvest fields. Thomson.—She has educated several

poor children, that were *picked up* in the

streets. Law. 3. To separate from any thing

useless or noxious, by gleaning out either part;

to clean by picking away filth.—

He could not stay to *pick* them in a pile

Of musty chaff.

Shak.

—It hath been noted by the ancients, that it is

dangerous to *pick* one's ears while he yawneth.

Bacon.—He *picks* and culls his thoughts for con-

versation. Addison. 4. To clean, by gathering off

gradually any thing adhering.—A dog expects,

till his master has done *picking* a bone. More.—

You are not to wash your hands, till you have

picked your salad. Swift. 5. [*Piquer*, Fr.] To

pierce; to strike with a sharp instrument.—Pick

an apple with a pin full of holes not deep, and

smear it with spirits. Bacon.—In the face, a wart

or fiery pustule, heated by scratching or *picking*

with nails, will terminate corrosive. Wiseman. 6.

To strike with bill or beak; to peck.—The eye

that mocketh at his father, the ravens of the val-

ley shall *pick out*. Prov. xxx. 17. 7. [*Picare*, Ita-

lian.] To rob.—The other night I fell asleep

here, and had my pocket *picked*; the house is

turn'd bawdy-house, they *pick* pockets. Shak.—

They have a design upon your pocket, and the

word conscience is only used as an instrument to

pick it. South. 8. To open a lock by a pointed

instrument.—

Did you ever find

That any art could *pick* the lock? Denham.

9. To *PICK* a hole in one's coat. A proverbial ex-

pression for finding fault with another.

(2.) * To PICK. *v. n.* 1. To eat slowly, and by

small morsels.—

Why stand'st thou *picking*? Dryden.

2. To do any thing nicely and leisurely.—

He was too warm on *picking* work to dwell.

Dryden.

* PICKAPACK. *adv.* [from *pack*, by a redupli-

cation very common in our language.] In man-

ner of a pack.—In a hurry she whips up her dar-

X x x

ling under her arms, and carries the other a *pick-
apack* upon her shoulders. *L'Esrange.*

* **PICKAXE.** *n. f.* [*pick* and *axe*.] An axe not made to cut, but pierce: an axe with a sharp point.—Their tools are a *pickaxe* of iron, 17 inches long. *Carew.*—

I'll hide my master from the flies, as deep
As these poor *pickaxes* can dig. *Shak.*

Pioneers, with spade and *pickaxe* arm'd,
Forerun the royal camp, to trench a field. *Milton.*

* **PICKBACK.** *adj.* [corrupted perhaps from *pickback*.] On the back.—

Mounted a *pickback* on the old. *Hudib.*

* **PICKED.** *adj.* [*piqué*, Fr.] Sharp; smart.
—Let the flake be made *picked* at the top. *Mortimer's Husbandry.*

* **PICKER.** *v. n.* [*piccare*, Italian.] 1. To pirate; to pilvage; to rob. *Ainsworth.* 2. To make a flying skirmish.—

No sooner could a hint appear,
But up he started to *pick*. *Hudibras.*

* **PICKER.** *n. f.* [from *pick*.] 1. One who picks or culls.—The *pickers* pick the hops into the hair-cloth. *Mortimer.* 2. A pickaxe; an instrument to pick with.—With an iron *picker* clear the earth out of the hills. *Mortimer.*

* **PICKEREL.** *n. f.* [from *pique*.] A small pike.

* **PICKEREL-WIEED.** *n. f.* [from *pique*.] A water plant, from which pikes are fabled to be generated.—The pikes are bred, some by generation, and some not; as of a weed called *pickerel weed*. *Walton*

(1.) **PICKERING**, a pretty large town in the N. Riding of Yorkshire, 13 miles from Scarborough, and 225 from London; but belonging to the duchy of Lancaster, on a hill among the wild mountains of Blakemore; between the forest of Pickering on the N. and Pickering Common on the S. It is said to have been built 270 years before Christ, by *Peridurus*, a king of the Britons, who was buried here. It had once a castle, the ruins of which are still to be seen; to whose jurisdiction many of the neighbouring villages were subject: and the adjacent territory, commonly called Pickering Lath, or the liberty or forest of Pickering, was given by Henry III. to his son Edmund, earl of Lancaster. A court is kept here for all actions under 40s. arising within the honour of Pickering. It is 26 miles NE. of York. Lon. o. 38. W. Lon. 54. 15. N.

(2—4.) **PICKERING FOREST**, &c. See last article.

PICKERY. *n. f.* in Scots law, petty theft, or stealing things of small value.

(1.) **PICKET.** *n. f.* an out-guard posted before an army, to give notice of an enemy approaching.

(2.) **PICKET**, a punishment, where a soldier stands with one foot upon a sharp-pointed stake; the time of his standing is limited according to the offence.

(3.) **PICKETS**, in fortification, stakes sharp at one end, and sometimes shod with iron, used in laying out the ground, about 3 feet long; but, when used for pinning the fascines of a battery, they are from 3 to 5 feet long.

(4.) **PICKETS**, in artillery, are about five or six feet long, shod with iron, to pin the park lines in laying out the boundaries of the park.

(5.) **PICKETS**, in the camp, are also stakes of about six or eight inches long, to fasten the tent cords, in pitching the tents; also, of about four or five feet long, driven into the ground near the tents of the horsemen, to tie their horses to.

(6.) **PICKETS**, in geography, a town of Virginia, 35 miles SSW. of Washington.

To **PICKET.** *v. a.* To torture by the picket. See **PICKET**, No 2.

(1.) * **PICKLE.** *n. f.* [*pekel*, Dutch.] 1. Any kind of salt liquor, in which flesh or other substance is preserved.—

Thou shalt be whipt with wire, and stew'd in brine.

Smarting in lingering *pickle*. *Shak.*

—Some fish are gutted, split, and kept in *pickle*. *Carew.*—He instructs his friends that dine with him in the best *pickle* for a walnut. *SpeBator.*—A third sort of antiscorbuticks are called astringent; as capers, and most of the common *pickles* prepared with vinegar. *Arbuthnot.* 2. Things kept in pickle. 3. Condition; state. A word of contempt and ridicule.—

How can'st thou in this *pickle*? *Shak.*

—A physician undertakes a woman with sore eyes; his way was to dawb 'em with ointments, and, while she was in that *pickle*, carry off a spoon. *L'Esrange.*—

Poor Umbra, left in this abandon'd *pickle*. *Swift.*

E'en sits him down.

(2.) **PICKLE**, (§ 1. *def. 1.*) OR **BRINE**, is commonly composed of salt, vinegar, &c. sometimes with the addition of spices, wherein meat, fruit, &c. are seasoned.

(3.) * **PICKLE**, or *picklet*. *n. f.* A small parcel of land inclosed with a hedge, which in some countries is called a *picklet*. *Philips.*

* To **PICKLE.** *v. a.* [from the noun.] 1. To preserve in pickle.—

Autumnal cornels next in order serv'd,

In lees of wine well *pickled* and preserv'd. *Dryden.*

Nay, to keep friendship, they shall *pickle* you. *Dryden.*

2. To season or imbue highly with any thing bad: as, a *pickled* rogue, or one consummately villainous.

* **PICKLEHERRING.** *n. f.* [*pickle* and *herring*.] A jack-pudding; a merry-andrew; a zany; a buffoon.—Another branch of pretenders to this art, without horse or *pickleherring*, lie snug in a garret. *SpeBator.*—The *pickleherring* found the way to shake him. *SpeBator.*

* **PICKLOCK.** *n. f.* [*pick* and *lock*.] 1. An instrument by which locks are opened without the key.—We have found upon him, Sir, a strange *picklock*. *Shak.*—Scipio, having such a *picklock*, would spend so many years in battering the gates of Carthage. *Brown.*—It is the very *picklock* that opens the way into all cabinets. *L'Esrange.*—Thou raisedst thy voice to describe the powerful Betty, or the artful *picklock*. *Arbuthnot.* 2. The person who picks locks.

PICKMERE, a river of Cheshire.

PICKOUAGAMIS,

PICKOUAGAMIS, a river of Canada, which rises from Lake Shabamouhwan, and runs into Lake St John.

* **PICKPOCKET**. *n. f.* [*pick* and *pocket*, or *purse*.]

* **PICKPURSE**. *s.* A thief who steals, by putting his hand privately into the pocket or purse.—I think he is not a *pick-purse*. *Swiss*.—It is reasonable, when Esquire South is losing his money to sharpers and *pickpockets*, I should lay out the fruits of my honest industry in a law-suit. *Arbutnot*.—*Pickpockets* and highwaymen observe strict justice among themselves. *Bentley*.—

His fellow *pickpurse*, watching for a job.

Swift.

Go drench a *pickpocket*, and join the mob.

Pope.

* **PICKTHANK**. *n. f.* [*pick* and *thank*.] An officious fellow, who does what he is not desired; a whispering parasite.—

Many tales devised,

By smiling *pickthanks* and base newsmongers.

Shak.

With pleasing tales his lord's vain ears he fed,

A flatterer, a *pickthank*, and a liar. *Fairfax*.

—The business of a *pickthank* is the basest of offices.

L'Esrange.—If he be great and powerful, spies and *pickthanks* generally provoke him to tyrannize over the innocent and the just. *South*.

* **PICKTOOTH**. *n. f.* [*pick* and *tooth*.] An instrument by which the teeth are cleaned.—If a gentleman leaves a *picktooth* case on the table after dinner, look upon it as part of your vails. *Swift*.

(1.) **PICO**, one of the AZORE ISLANDS, so called from a very high mountain in it, terminating like Teneriffe in a peak, and reputed equal to it in height. This island lies about 12 miles SW. of St George, 12 of Terceira, and about 9 SE. of Fayal. The circumference of the island is computed at about 15 leagues; and its most remarkable places are Pico, Lagoas, Santa Cruz, San Sebastian, Pelquin, San Rocco, Playa, and Magdalena; the inhabitants of which live wholly on the produce of the island, in great plenty and felicity. The cattle are various, numerous, and excellent in their several kinds; it is the same with the vine; and its juice, prepared into different wines, the best in the Azores. Besides cedar and other timber, they have a kind of wood which they call *teixo*, solid and hard as iron; and veined, when finely polished, like a rich scarlet tabby; which colour it has in great perfection. The longer it is kept, the more beautiful it grows; hence it is, that the *teixo* tree is felled only for the king's use or by his order, and is prohibited from being exported as a common article of trade. Lon. 28. 23. W. Lat. 38. 29. N.

(2.) **PICO**, a lofty mountain in the above island, which gives name to it, filled with dismal dark caverns or volcanoes, which frequently vomit out flames, smoke, and ashes, to a great distance. At the foot of it, towards the east, is a spring of fresh water, generally cold, but sometimes is heated with subterraneous fire, as to rush forth in torrents, with a kind of ebullition like boiling water; equaling that in heat, and sending forth a steam of sulphureous fetid vapours, liquefied stones, minerals, and flakes of earth all on fire, in such

quantities, and with such violence, as to have formed a kind of promontory, vulgarly called *Mysterios*, on the declivity of the coast, and at the distance of 1200 paces from the fountain. Such is the account given by Ortelius.

(3.) **PICO**, the capital of the above island.

(4.) **PICO**, a mountain of Spain, on the confines of New and Old Castile and Estremadura.

(5.) **PICO**, or **PUERTO DE PICO**, a town of Spain, in Old Castile, on a mountain, near the source of the Tormes.

(6.) **PICO MARINA**, a sea-fish common at Kongo in Africa, which derives its name from the similarity of its mouth to the beak of a wood pecker. It is of a large size, and prodigious strength, has 4 fins on its back, 3 under its belly, and one on each side of its head; its tail is large and forked, by which it cuts the waves with surprising force and velocity. It is at war with every fish that swims, and with every thing it meets in its way, without being intimidated by the largest vessels; a surprising instance of which intrepidity we are told by some missionaries, whose ship was attacked by one of them near these coasts, in the dead of night. The violence of the shock which it gave to the vessel quickly awakened the captain and the rest of the people, who immediately ran to the ship's side, where they perceived, by moon-light, this huge monster fastened by its forehead to the vessel, and making the strongest efforts to disengage itself; upon which some of them tried to pierce him with their pikes, but he got off before they could accomplish their aim. On the next morning, upon visiting that side of the vessel, they found, about a foot below the surface of the water, a piece of its bony snout stuck fast into the wood, and two or three inches of it projecting outwards. They went presently after to visit the inside of the ship, and discovered about five or six inches more of the point of the horn which had penetrated through the plank.

(7.) **PICO SACRO**, a mountain of Spain in Galicia, nine miles south of St Jago.

(8.) **PICO TENERIFFE**, a mountain of Barbadoes, one mile south of Cuckold's Point.

PICOLATA, a fort of East Florida, on the St John, 3 miles from Fort Poopoa, and 27 from St Augustine.

PICOSA, or **PISANA**, high mountains of Peru, which serve as land-marks, extending about 22 miles on the coast, south of the equator.

PICQUERING. *part. n. f.* a flying war, or skirmish, made by soldiers detached from two armies for pillage, or before a main battle begins.

PICQUET, or **PICKET**. See **PIQUET**.

PICRA, a lake of Africa, which Alexander the Great crossed, when he went to consult the oracle of Jupiter Ammon. *Diad*.

PICRAMNIA, in botany, a genus of the pentandria order, belonging to the diœcia class of plants, and in the natural method ranking with those that are doubtful. The calyx is tripartite; the corolla has three petals; the stamina from three to five, awl-shaped, and seem to join together at the base; there are two stili, which are short and bent backwards; the berry is roundish, and contains two oblong seeds, and sometimes one seed only. There is only one species, viz.

X x x 2

PICRAMNIA

PICRAMNIA ANTIDIDYMA, the *marjoe bush*. This shrub is frequent in copses and about the skirts of woods in Jamaica, rising about 8 or 9 feet from the ground. The leaves are oval, pointed, and placed alternately along the branches; the flower-spikes are long, pendulous, and slender; the florets small and white; the berries are numerous, at first red, then of a jet black colour; the pulp is soft, and of a purple complexion. The whole plant is bitter, and especially the berry. The negroes make a decoction of them, and use it in weaknesses of the stomach, and in venereal cases.

PICRANIA, in botany, a new genus of plants, of the class pentandria, and order monogynia, lately discovered. Only one species is yet known, viz.

PICRANIA AMARA, or *Bitter Wood*, a tall and beautiful timber tree, common in the woods of Jamaica. The name is expressive of its sensible qualities. Every part of it is intensely bitter; and even after the tree has been laid for floors many years, whoever rubs or scrapes the wood, feels a great degree of bitterness in their mouth or throat. Cabinet-work made of this wood is very useful, as no insect will live near it. This tree has a great affinity to the *Quassia Amara* of Linnaeus; in lieu of which it is used as an antiseptic in putrid fevers. When used, leas of it will do than of the *Quassia Amara* of Surinam. See **QUASSIA**.

PICRIS, in botany, **OX-TONGUE**; a genus of the polygamia aequalis order, belonging to the syngenesia class of plants, and in the natural method ranking under the 49th order, *Compositae*. There are 4 species, of which the only remarkable one is the

PICRIS ECHINOIDES, the common ox-tongue, growing spontaneously in corn-fields in Britain. It has undivided leaves embracing the stem, with yellow blossoms, which sometimes close soon after noon, at other times remain open till nine at night. It is an agreeable pot-herb while young. The juice is milky, but not too acrid.

PICRIUM, in botany, a genus of the monogynia order, belonging to the tetrandria class of plants, and in the natural method ranking with those that are doubtful. The calyx is monophyllous and quinquefid, the corolla monopetalous, and its tube is short, the filaments are four, and hooded at their insertion, the style long and thick, the stigma bilamellated; the capsule is round, bivalved, and contains a number of small seeds. There are two species;

1. **PICRIUM RAMOSA**, and

2. **PICRIUM SPICATA**; both natives of Guiana. Both species are bitter, and employed in dyspepsy, and to promote the menses; they are also recommended in visceral obstructions.

* **PICT. n. f.** [*pietus*, Lat.] A painted person.—Your neighbours would not look on you as men,

But think the nation all turned *Picts* again. *Lee*.

PICTÆ. See **PICTI**, and **PICTS**.

PICTAVI, or **PICTONES**. See **PICTONES**.

PICTAVIA, an ancient kingdom of Caledonia, or Scotland, comprehending, at its most flourishing period, all the territories bounded on the N. by the Forth and Clyde, and on the S. by the Tweed and Solway. It was inhabited by the **Picts**. See **PICTS**.

PICTAVIUM, an ancient town of Gaul, the capital of the **PICTONES**, called also **LEMNUM**, now **POICTIERS**.

(1.) **PICTET**, **Benedict**, a native of Geneva, born in 1635, of a distinguished family. After having travelled into Holland and England, he taught theology in his own country with extraordinary reputation. The university of Leyden, after the death of Spantelma, invited him to fill his place; but he preferred his own country, for which he received the thanks of the council. He died 9th June, 1724, aged 69. He was remarkable for charity and affability. He published a great number of works in Latin and French, which are much esteemed in Protestant countries. The principal of these are, 1. A *Syſtem of Chriſtian Theology* in Latin, 3 vols. in 4to, best edit. 1721. 2. *Chriſtian Morality*, Geneva, 1710, 8 vols. 12mo. 3. *The Hiſtory of the 11th and 12th centuries*; a ſequel to that of Sæcur, 1713, 2 vols. 4to, and held in higher eſtimation. 4. *Several Controverſial Treatiſes*. 5. A great number of tracts on morality and piety; particularly the *Art of Living and Dying well*; Geneva, 1705, 12mo. 6. *Letters*. 7. *Sermons*, from 1697 to 1721; 4 vols. 8vo.

(2.) **PICTET**, **John Lewis**, a counſellor of Geneva, born in 1739, of the ſame family. He was member of the Council of Two Hundred; Counſellor of State and Syndic, and died in 1781. He ſtudied aſtronomy, and made ſeveral voyages into France and England. He had a moſt enlightened underſtanding. He left in MS. the “*Journal of a Voyage which he made to Ruſſia and Siberia in 1768 and 1769, in order to obſerve the tranſit of Venus over the ſun’s diſk*,” a work very intereſting, from the lively deſcriptions which it gives both of men and of nature.

PICTI, or **PICTÆ**. [*Lat. painted.*] an ancient people of Scythia, ſo named, becauſe they painted their bodies with various colours, to make them appear terrible to their enemies. They are alſo called **AGATHYRSI**. According to *Servius*, a colony of them emigrated to the north parts of Britain, where they ſettled, and preſerved their name and manners, and gave riſe to the kingdom of the **Picts**. But this is diſputed. See **PICTS**.

PICTLAND. See **PENTLAND**.

PICTONES, an ancient people of Gaul, mentioned by *Cæſar* (*De Bell. Gall. vii. c. 4.*) who inhabited the country called *Poictrov* in modern times, till the late revolution in France.

* **PICTORIAL. adj.** [*from pictor, Latin.*] Produced by a painter. A word not adopted by other writers, but elegant and uſeful.—Sea horſes are but groſſeſc delineations, which fill up empty ſpaces in maps, as many *pictorial* inventions, not any phyſical ſhapes. *Brown’s Vulgar Errors*.

PICTOU, an iſland near the N. coaſt of Nova Scotia. Lon. 62. 13. W. Lat. 45. 46. N.

PICTOWA, a mountain of Siberia, in *Barraba*, abounding with rich copper mines, which have alſo ſilver and gold in them. See **BARRABA**.

PICTS, one of thoſe nations who anciently poſſeſſed the north of Britain. It is generally believed that they were ſo called from their cuſtom of painting their bodies; an opinion which *Camden* ſupports with great erudition. (See *Gough’s edition*, Vol. I. p. xci. of the preface.) It is certainly liable,

liable, however, to considerable objections; for as this custom prevailed among the other ancient inhabitants of Britain, who used the *gladium* of Pliny and the *vitrum* of Mela for that purpose, it may be asked, Why the name of PICTI was confined by the Romans to only one tribe, when it was equally applicable to many others? Why should they design them only by an epithet without ever annexing their proper name? Or why should they impose a new name on this people only, when they give their proper name to every other tribe which they have occasion to speak of? As these questions cannot be answered in any satisfactory manner, we must look for some other derivation of the name. The Highlanders of Scotland who speak the ancient language of Caledonia, express the name of this once famous nation by the term *Piùich*; a name familiar to the ears of the most illiterate, who could never have derived it from the Roman authors. The word *Piùich* means *pillersers* or *plunderers*. The appellation was probably imposed upon this people by their neighbours, or assumed by themselves, some time after the reign of Caracalla, when the unguarded state of the Roman province, on which this people bordered, gave them frequent opportunities of making incursions thither, and committing depredations. Accordingly this name seems to have been unknown till the end of the 3d century. Eumenius the panegyrist is the first Roman author who mentions this people under their new name of *Piùich*, or, with a Latin termination, *Piùii*. When we say that this name may have been probably assumed for the reason just now mentioned, we must observe, that, in those days of violence, the character of a robber was attended with no disgrace. If he had the address to form his schemes well, and to execute them successfully, he was rather praised than blamed for his conduct, and considered as a *hero*, provided he made no encroachments on the property of his own tribe or any of its allies. This is no peculiar stigma upon the Picts; for other nations of antiquity, in the like rude state, thought and acted as they did. See *Thucydides*, lib. 3. p. 3. and *Virg. Æn.* 7. 745 et 749. Concerning the origin of the Picts, authors are much divided. Boethius derives them from the Agathyrsi, Pomponius Latius from the Germans, Bede from the Scythians, Camden and Father Innes from the ancient Britons, Stillingfleet from a people inhabiting the Cimbrica Chersonesus, and Keating and O'Flaherty, on the authority of the Psalter Cassel, derive them from the Thracians. But the most probable opinion is, that they were the descendants of the old Caledonians. Several reasons are urged in support of this opinion by Dr Macpherson; and the words of Eumenius, "Caledonum, aliorumque Pictorum, filias," &c. plainly imply that the Picts and Caledonians were one and the same people. As there has been much dispute about the origin of the Picts, so there has been likewise about their language. There are many reasons which make it plain that their tongue was the Gaelic or Celtic; and these reasons are a further confirmation of their having been of Caledonian extract. Through the E. and NE. coasts of Scotland (which were possessed by the Picts) we meet with an innumera-

ble list of names of places, rivers, mountains, &c. which are manifestly Gaelic. From a very old register of the priory of St Andrew's (*Dalrymple's Collections*, p. 122.) it appears, that in the days of Hungus, the last Pictish king of that name, St Andrew's was called *Macrofs*; and that the town now called *Queensferry* had the name of *Ardebin-nenchan*. Both these words are plain Gaelic. The first signifies *the heath or promontory of boars*; and the latter, *the height or peninsula of Kenneth*. In the list of Pictish kings published by Father Innes, most of the names are obviously Gaelic, and in many instances the same with the names in the list of Scottish or Caledonian kings published by the same author. Had Innes understood any thing of this language, he would not have supposed with Camden that the Picts spoke the British tongue. The two words on which they built their conjecture (*Strath* and *Aber*) are as common in the Gaelic as they could have been in the British, and at this day make a part of the names of places in countries to which the Pictish empire never extended. The names of *Strathfillan* and *Lochaber* may serve as instances. Bede, as much a stranger to the Celtic as either of these antiquaries, is equally unhappy in the specimen which he gives of the Pictish language in the word *penuabel*, *the head of the wall*. Allowing the commutation of the initial *p* into *c*, this word has still the same meaning in Gaelic which Bede gives it in the Pictish. The Picts of the earliest ages, as appears from the joint testimony of all writers who have examined the subject, possessed only the E. and NE. coast of Scotland. On one side, the ancient Drumalbin, or that ridge of mountains reaching from Lochlond near Dumbarton to the frith of Taine, which separates the county of Sutherland from a part of Ross, was the boundary of the Pictish dominions. Accordingly we find in the life of St Columba, that, in travelling to the palace of Brudeus, king of the Picts, he travelled over Drumalbin, the *Dorjum Britannic* of Adamnan. On the other side, the territory of the Picts was bounded by the Roman province. After Britain was relinquished by the emperor Honorius, they and the Saxons by turns were masters of those countries which lie between the frith of Edinburgh and the river Tweed. We learn from Bede, that the Saxons were masters of Galloway when he finished his Ecclesiastical History. The Picts, however, made a conquest of that country soon after; so that, before the extinction of their monarchy, all the territories bounded on the one side by the Forth and Clyde, and on the other by the Tweed and Solway, fell into their hands. The history of the Picts, as well as of all the other ancient inhabitants of Britain, is extremely dark. The Irish historians give us a long list of Pictish kings, who reigned over Pictavia for 11 or 13 centuries before the Christian era. After them Innes, in his Critical Essay, gives us a list of above 50, of whom no less than five held the sceptre, each for a whole century. It is probable that these writers had confounded the history of the Picts with that of their ancestors the old Caledonians. In any other view, their accounts of them are highly fabulous; and have been long ago confuted by Dr Macpherson of Slate, an antiquary of much learning and research.

search. The Picts were probably not known by that name before the 2d or 3d century. Adamnan, abbot of Iona, is the first author who expressly mentions any Pictish king: and the oldest after him is Bede. We are informed by these two writers, that St Columba converted Brudeus king of the Picts to the Christian faith. Columba came into Britain A. D. 565. Before that period we have no general record to ascertain so much as the name of any Pictish king. The history of *Druff* or *Dress*, who is said to have reigned over the Picts in the beginning of the 5th century, when St Ninian first preached the gospel to that nation, A. D. 630. has all the appearance of fiction. His having reigned 100 years, and his putting an end to 100 wars, are stories which exceed all the bounds of probability. Brudeus, the contemporary of Columba, is the first Pictish king mentioned by any writer of authority. What figure his ancestors made, or who were his successors on the throne of Pictavia, cannot be ascertained. Bede informs us, that, during the reign of one of them, the Picts killed Egfred king of Northumberland in battle, and destroyed the greatest part of his army. The same author mentions another of their kings called *Naitan*, to whom Ceolfrid, abbot of Wrethmouth, wrote his famous letter concerning Easter and the Tonsure; a letter in which Bede himself is supposed to have had a principal hand. Roger Hoveden and Simon of Durham mention two other Pictish kings *Onnuft* and *Kinath*, the first of whom died in 761, and the latter flourished about the 774, and gave an asylum to Alfred of Northumberland, who was about that time expelled his kingdom. The accounts given by the Scots historians of several other Pictish kings cannot be depended on; nor are the stories told by the British historians, Geoffroy of Monmouth and the author of the *Eulogium Britannicæ*, worthy of greater credit. In the 9th century the Pictish nation was totally subdued by the Scots in the reign of Kenneth II. Since that time their name has been lost in that of the conquerors, with whom they were incorporated after this conquest: however, they seem to have been treated by the Scottish kings with great lenity, so that for some ages after they commanded a great deal of respect. The prior of Hogulfstead, an old English historian, relates, that they made a considerable figure in the army of David I. in his disputes with Stephen king of England. In a battle fought in 1136, by the English on one side, and the Scots and Picts on the other, the latter insisted on their hereditary right of leading the van of the Scots army, and were indulged in that request by the king. The principal feat of the Pictish kings was at Abernethy. Brudeus, however, as appears from the accounts given by Adamnan, in his life of Columba, had a palace at Inverness, which was probably near the extremity of his territory in that quarter. With respect to the manners and customs of the Picts, there is no reason to suppose they were any other than those of the old Caledonians and Scots, of which many particulars are related in the Greek and Roman writers. Upon the decline of the Roman empire, cohorts of barbarians were raised, and Picts were invited into the service, by Honorius, when peace was every where restored,

and were named *Honoriaci*. Those under Constantine opened the passes of the Pyrenean mountains, and let the barbarous nations into Spain. From this period we date the civilization of their manners, which happened after they had by themselves, and then with the Scots, ravaged this Roman province.

PICTS WALL, in antiquity, a wall begun by the emperor Adrian, on the northern bounds of England, to prevent the incursions of the Picts and Scots. It was first made only of turf strengthened with palisadoes, till the emperor Severus, coming into Britain in person, built it with solid stone. This wall, part of which still remains, began at the entrance of the Solway Frith in Cumberland, and running NE. extended to the German Ocean. See **ADRIAN** and **SEVERUS**.

(1.) * **PICTURE**. *n. f.* [*picture*, Latin.] 1. A resemblance of persons or things in colours.—

Vouchsafe me yet your *picture* for my love,
The *picture* that is hanging in your chamber.

Shak.

—*Pictures* and shapes are but secondary objects.
Bacon's Nat. Hist.—

He with an empty *picture* fed his mind. *Dryd.*
—As many *pictures* of animals should be got him as can be found with the printed names to them. *Locke*.—She often shews them her own *picture*. *Law.* 2. The science of painting. 3. The works of painters.—Quintilian, when he saw any well-expressed image of grief either in *picture* or sculpture, would usually weep. *Wotton*.—I had no design to ruin the company of *picture* drawers. *Stillingfleet*. 4. Any resemblance or representation.—

Vouchsafe this *picture* of thy soul to see. *Dryd.*
—It suffices to the unity of any idea, that it be considered as one representation or *picture*. *Locke*.

(2.) **PICTURE**. See **DRAWING** and **PAINTING**.

* **To PICTURE**. *v. a.* [from the noun.] 1. To paint; to represent by painting.—

I have not seen him so *picture'd*. *Shak. Cymb.*
—He who caused the spring to be *pictured*, added this rhyme for an exposition. *Carew's Survey*.—Mary Magdalen is *pictured* before our Saviour washing his feet on her knees. *Brown's Vulg. Err.*
—Love is like the painter, who, being to draw the *picture* of a friend having a blemish in one eye, would *picture* only the other side of his face. *South.*
2. To represent.—I, that do but hear it from you, and do *picture* it in my mind, do greatly pity it. *Spenser*.—

See here thy *picture'd* life. *Thomson's Winter*.

(1.) **PICTURESQUE**, [*picture*, Fr.] *adj.* Of or belonging to painting: strikingly beautiful, or romantic, so as meriting to be painted.

(2.) **PICTURESQUE BEAUTY** refers to "such beautiful objects as are suited to the pencil." This epithet is chiefly applied to the works of nature, though it will often apply to the works of art also. Those objects are most properly denominated picturesque which are disposed by the hand of nature with a mixture of *varied rudeness, simplicity, and grandeur*. A plain neat garden, with little variation in its plan, and no striking grandeur in its position, displays too much of art, design, and uniformity, to be called picturesque. "The ideas of *neat* and *smooth* (says Mr Gilpin), instead

instead of being picturesque, in fact disqualify the object in which they reside from any pretensions to picturesque beauty. Nay, farther, we do not scruple to assert, that roughness forms the most essential point of difference between the beautiful and the picturesque; as it seems to be that particular quality which makes objects chiefly pleasing in painting. I use the general term *roughness*; but properly speaking roughness relates only to the surfaces of bodies: when we speak of their delineation, we use the word *ruggedness*. Both ideas, however, enter equally into the picturesque, and both are observable in the smaller as well as in the larger parts of nature; in the outline and bark of a tree, as in the rude summit and craggy sides of a mountain. On the whole, picturesque composition consists in uniting in one whole a variety of parts; and these parts can only be obtained from rough objects. It is possible therefore to find picturesque objects among works of art, and it is possible to make objects so; but the grand scene of picturesque beauty is nature in all its original variety, and in all its irregular grandeur.

PICUPINIMA, in ornithology, is the name of a species of pigeon in Brasil. It is so very small as scarce to exceed the lark in size. Its head, neck, and wings, are of a pale lead colour, with a black semilunar mark at the extremity of each wing; but its long wing-feathers, which are seen when the wings are expanded in flying, are of a reddish brown on one side, and blackish on the other, with black ends or tips; the tail is long, and is variegated with black, white, and brown; the belly is covered with white feathers, every one of which has a brown mark of the shape of a half moon at the end.

PICUMNUS and PILUMNUS, were two deities at Rome, who presided over the auspices required before the celebration of nuptials. Pilumnus was supposed to patronize children, as his name seems in some manner to indicate *quod pellat mala infantia*. The manuring of land was first invented by Picumnus, for which reason he is called *Sterquilinus*. Pilumnus is also invoked as the god of bakers and millers, as he is said to have first invented the art of grinding corn.

(I.) PICUS, in fabulous history, a king of Latium, son of Saturn. He married VENILIA, or CANENS, by whom he had FAUNUS. He was beloved by the goddess POMONA, and returned her affection. As he was one day hunting in the woods, he was met by Circe, who became deeply enamoured of him, and who changed him into a woodpecker, called by the name of *picus* among the Latins. His wife Venilia was so disconsolate when she was informed of his death, that she pined away. Some say that Picus was the son of PILUMNUS, and that he gave out prophecies to his subjects by means of a favourite woodpecker; from which originated the fable of his being metamorphosed into that bird.

(II.) PICUS, John, earl of Mirandola, a prodigy of parts and learning, was the youngest child of John Francis Picus earl of Mirandola and Concordia; and was born in 1463. The progress that he made in letters was extremely rapid. He was the scholar of R. Jochanan, a German Jew, who confirmed his natural fondness for the cabalistical

writings. After visiting the most famous universities of France and Italy, he went to Rome; where, in 1486, before he was 24 years of age, he published 900 propositions in logic, mathematics, physics, divinity, cabalistic learning, and magic, drawn not only from Greek and Latin, but even from Jewish and Arabian writers; subjoining to his advertisement, that, "if any philosopher or divine would come to Rome to dispute with him upon any or all of them, he would defray the expences of his journey from the remotest corners of Italy." But some of his propositions being charged with heresy, he was forbid to dispute upon them. At the age of 28, he confined himself wholly to the study of the scriptures; and undertook to combat the Jews and Mahometans, as well as to confound judicial astrology. He died in 1494, in his 32d year. He was called the *phoenix of his age*, and by Scaliger *Monstrum sine Vitio*. He composed a great number of works, which have often been printed.

(III.) PICUS, John Francis, prince of Mirandola, nephew of John Picus mentioned above, was born about the year 1469. He cultivated learning and the sciences after the example of his uncle; but he had a principality and dominions to superintend, which involved him in great troubles, and at last cost him his life. He was twice driven from his principality, and twice restored; and at last, in 1533, was, together with his eldest son Albert, assassinated in his own castle by his nephew Galeotti. He was a great lover of letters; and such of his works as were then composed were inserted in the Strasburgh edition of his uncle's in 1504, and continued in future impressions, besides some others which were never collected.

(IV.) PICUS, the WOODPECKER, in ornithology, a genus belonging to the order of *picæ*. The beak is straight, and consists of many files, and is like a wedge at the point: the nostrils are covered with bristly feathers; the tongue is round like a worm, very long, and sharp at the point, which is beset with bristles bent backwards. The grand characteristic, says Latham, of these birds is the tongue (which in no bird is similar, the wryneck excepted, whose other characters, however, differ too widely to give it place in this class,) the muscles necessary to the motions of which are singular and worthy of notice; affording the animal means of darting it forwards the whole length, or drawing it within the mouth at will. See *Ray on the Creation*, p. 143. *Derham's Physico-Theol.* p. 342. Note c. *Will. Orn.* p. 136. l. 21. Mr Latham enumerates no less than 50 species of woodpeckers, and 9 varieties. The most remarkable are these:

1. PICUS AURATUS, the gold-winged woodpecker, is about 11 inches long, and weighs about 5 oz. The bill is an inch and a half long, and is somewhat bent, and is not square but roundish, ridged only on the top, the point being sharp; the upper parts of the head and neck are ash-coloured; the hind head is red; the sides of the head, throat, and fore part of the neck, are pale yellow; on each side of the head is a stripe of black, from the base of the lower jaw to the neck; the back, scapulars, and wing covers, are of a grey brown colour, transversely striated with black lines; the rump is whitish; the breast, belly, and sides, are whitish

whitish yellow, and each feather is marked with a round black spot at the tip; on the middle of the breast there is a large crescent of black; the thighs, upper and under tail coverts, are black and white mixed; the quills are brown, with yellow shafts spotted with brown on the outer edge; the tail is blackish, being outwardly edged with grey; the other feather is dotted with whitish on the margins; the shafts of all but the two middle feathers, are yellow half way from the base; and the legs and claws are brown. The female differs in having the crown and neck behind grey brown; the hind head of a less vivid red; and the greater quills not spotted on the edges. She also wants the black list on the throat, but otherwise is like the male. This species inhabits Virginia, Carolina, and Canada, and abounds in new Jersey and about New York, where it is called by some *bittock* or *pint*, and by others, *high-hole*. Both the first names have some relation to its note; and the latter, perhaps, to the situation of the nest. It is almost continually on the ground, and is not observed to climb on the trees, like others of the genus. It lives chiefly on insects, and is commonly very fat, so as to be thought very palatable for the table. It stays all the year. In its form and some of its qualities, it resembles the cuckoo. It flies to the top of trees, and sits occasionally on the branches. Forster, in the *Philos. Trans.* says it is a bird of passage in the northern parts of America, visiting the neighbourhood of Albany Fort in April, and leaving it in September: that it lays from four to six eggs, in hollow trees, and feeds on worms and other insects.

2. *PICUS ERYTHROCEPHALUS*, the *red-headed wood-pecker*, is about $8\frac{1}{2}$ inches long, and weighs 3 oz. The bill is an inch and a quarter in length, of a lead colour, with a black tip; the irides are dusky; the head and the neck are of a most beautiful crimson; the back and wings are black; the rump, breast, and belly are white; the ten first quills are black, the 11th black and white, and the others are white with black shafts; the tail is black and cuneiform; the legs and claws are of a lead colour. The cock and hen are very nearly alike. This species inhabits Virginia, Carolina, Canada, and most of the parts of North America; but at the approach of winter, it migrates more or less to the S. according to the severity of the season; and upon this circumstance the people of North America foretell the rigour or clemency of the ensuing winter. Kalm observes, that it is a very common bird, and is very destructive to the maize fields and orchards, pecking through the ears of maize, and destroying great quantities of apples. In some years they are more numerous than in others, when they attack the orchards where the sweet apples grow, which they eat so far that nothing remains but the mere pills. Some years ago there was a premium of two pence per head paid for the public fund, to extirpate these pernicious birds. They are likewise very fond of acorns. In Virginia and Carolina, they stay the whole year, but are not seen in such numbers in winter as in summer. During the winter they are very tame, and often come into the houses as the redbreast does in England. This species is found chiefly in old trees; and the noise they make with

their bills may be heard above a mile distant. It builds the earliest of all the wood-peckers, and generally pretty high from the ground. It is accounted very good eating.

3. *PICUS FLAVUS*, the *yellow woodpecker* is about 9 inches long. The bill is of a yellowish white, and more than an inch long; the hind head is crested; the head itself, the neck, and whole body, are covered with dirty white feathers; from the lower jaw to the ears, on each side, there is a red stripe; the wing coverts are brown and edged with yellowish, and some of the greater ones are mixed with rufous on the inner web; the quills are brown or rufous; the tail is black; the legs and claws are grey. This species is common at Cayenne, and is called there *chapentier jaune*. It makes its nest in old trees which are rotten within; making with its bill a hole from without, at first horizontal, but declining downward as soon as it has pierced through the sound part, till it is at last a foot and a half below the first opening. The female lays three white, and nearly round eggs, and the young are hatched about the beginning of April. The male bears his share in the work with the female, and, in her absence, keeps centinel at the entrance of the hole. The note of this bird is a kind of whistle six times repeated, of which the two or three last are in a graver accent than the others. The female wants the red band on the side of the head which the male has. Specimens vary; some are of that dirty white, as Brysson describes it, others of a light yellow; which last is the case in a specimen in the Leverian museum: this is 13 inches in length.

4. *PICUS MAJOR*, the *great spotted woodpecker*, weighs $2\frac{1}{2}$ oz. the length is 9 inches; the breadth 16. The bill is one and a quarter long, of a black horn colour. The irides are red. The forehead is of a pale buff colour; the crown of the head a glossy black; the hind part marked with a rich deep crimson spot. The cheeks are white; bounded beneath by a black line, that passes from the corner of the mouth, and surrounds the hind part of the head. The neck is encircled with a black colour; the throat and breast are of a yellowish white; the vent feathers of a fine light crimson. The back, rump, and coverts of the tale, and lesser coverts of the wings, are black; the scapular feathers and coverts adjoining to them are white. The quill feathers are black, elegantly marked on each web with round white spots. The 4 middle feathers of the tail are black, the next tipped with dirty yellow; the bottoms of the two outmost black; the upper parts a dirty white. The exterior feathers marked on each web with two black spots; the next with two on the inner web, and only one on the other. The legs are of a lead colour. The female wants that beautiful crimson spot on the head; in other respects the colours of both agree. This species is much more uncommon than the *VIRIDIS*, (No. 10.) and keeps altogether in the woods. They are pretty common in England, France, Germany, and other parts of Europe, frequenting the woods, and are likewise met with in America. They are very cunning, and hide themselves when observed. The extreme facility with which these birds descend and ascend the trees is surprising.

5. *PICUS MARTIUS*, the *greatest black woodpecker*, is about the size of a jackdaw, being about 17 inches long; the bill is nearly 2½ inches in length, of a dark ash colour, and whitish on the sides; the irides are pale yellow, and the eyelids are naked according to Scopoli; the whole bird is black, except the crown of the head, which is vermilion; the first quill feather is the shortest, and the two middle tail feathers, which are longer than the others, make it appear a little rounded; the legs are of a lead colour, covered with feathers on the fore part for half their length. The female differs from the male, in having the hind head only red, and not the whole crown of the head; and the general colour of the plumage has a strong cast of brown in it. Sometimes the red on the hind head is wholly wanting; and indeed both male and female vary in different subjects, in their proportion of red on the head. This species is found on the continent of Europe, but is numerous only in Germany. It is not an inhabitant of Italy or France, but it is found in Sweden, Switzerland, and Denmark, though not in winter. It builds in old ash and poplar trees, making large and deep nests; and Frisch observes, that they often so excavate a tree, that it is soon after blown down with the wind; and that under the hole of this bird may often be found a bushel of dust and bits of wood. The female lays two or three white eggs, the colour of which is peculiar to the whole of the genus.

6. *PICUS MEDIUS*, the *middle-sized woodpecker*, agrees with the *MAJOR* (Nº 4.) in colours and size, excepting that the crown of the head of this is of a rich crimson; the crown of the head in the male of the former black; and the crimson is in form of a bar on the hind part. Birds thus marked have been shot in Lancashire and other parts of England; but Mr Pennant is doubtful whether they are varieties, or distinct species.

7. *PICUS MINOR*, the *least spotted woodpecker*, scarce weighs an ounce: the length is six inches; the breadth 11. The forehead is a dirty white; the crown of the head, in the male, of a beautiful crimson: the cheeks and sides of the neck are white, bounded by a bed of black beneath the former. The hind part of the head and neck, and the coverts of the wings, are black; the others varied with black and white: the breast and belly are of a dirty white: the crown of the head, in the female, is white; the feet are of a lead colour. It has all the characters and actions of the greater kind, but is not so often met with. Buffon affirms, that it inhabits most parts of France. It approaches near habitations in winter, and may be seen in orchards adjoining to houses. It builds in an hole of a tree, and often disputes the right of possession with the little colemouse. Willoughby says it is called in England by the name of *hick-wall*. It is said to inhabit the higher parts of Asia.

8. *PICUS PRINCIPALIS*, the *white-billed woodpecker*, is somewhat bigger than the *MARTIUS*, (Nº 5.), and equal in size to a crow. It is 16 inches long, and weighs about 20 ounces. The bill is white as ivory, three inches long, and channelled; the irides are yellow, and on the hind head is an erect pointed crest, of a fine red colour, some of the feathers of which are two inches long; the head

itself, and the body in general, are black; but the lower part of the back, rump, and upper tail-coverts are white; from the eye there arises a stripe of white, which passes on each side of the neck down to the back; 3 or 4 of the prime quills are black, but the rest are white; the tail is cucumberiform, and of the same colour as the body; the legs and claws are also black. This species inhabits Carolina, Virginia, New Spain, and Brazil, and is called by the Spaniards *carpenter*, and not without reason, as this as well as the other species make a great noise with the bill against the trees in the woods, where they may be heard at a great distance, as if carpenters were at work, making, according to Catelby, in an hour or two, a bushel of chips. He adds, that the Canadian Indians make use of the bills of these birds for coronets, setting them round in a wreath with the points outwards; and that the northern Indians purchase them of the southern at the rate of two and three buck skins per bill. Kalm says they are found in New Jersey, though very seldom, and only at certain seasons.

9. *PICUS PUBESCENS*, the *little woodpecker*, according to Catelby, weighs only about an ounce and an half. Brisson says it is larger than the smallest of our European species, being about 5½ inches long. The bill is about eight lines long, and of a horn colour; the top of the head is black, and on each side above the eye is a white line; the hind head is red: the hind parts of the neck, the back and rump are black, which is divided into two parts by a line of white passing down the middle to the rump; the scapulars, upper wing and tail-coverts are black; the greater wing-coverts and quills are spotted with white; the under parts of the body are pale grey; the tail is black; the four middle feathers are plain, the rest are barred with white and black; and the legs and claws are black. The female has no red on the hind head. Linnæus says, that the outer tail-feather is white, marked with four black spots. This species inhabits Virginia and Carolina. According to Kalm, it abounds in New Jersey, where it is the most daring and dangerous to orchards. As soon as it has pecked one hole in a tree, it makes another close to the first, in an horizontal direction, proceeding till it has made a circle of holes quite round the tree; and the apple-trees in the orchards have often several rings of holes round the stem, inasmuch that the tree frequently dries up and decays.

10. *PICUS VIRIDIS*, the *green woodpecker*, weighs 6½ oz.; its length is 13 inches, the breadth 20½; the bill is dusky, triangular, and near two inches long; the crown of the head is crimson, spotted with black, and the males have a rich crimson mark beneath the blackness; the back, neck, and lesser coverts of the wings, are green; the rump of a pale yellow; the whole of the under part of the body is of a very pale green, and the thighs and vent are marked with dusky lines; the legs and feet are of a cinereous green; the tail consists of ten stiff feathers, whose ends are generally broken, as the bird rests on them in climbing; their tips are black; the rest of each is alternately barred with dusky and deep green. These birds feed entirely on insects; and their principal action is

that of climbing up and down the bodies or boughs of trees: for the first purpose they are provided with a long slender tongue, armed with a sharp bore, and barbed on each side, which by the means of a curious apparatus of muscles they can exert at pleasure, darting it to a great length into the clefts of the bark, transfixing and drawing out the insects that lurk there. They make their nests in the hollows of trees: in order therefore to force their way into these cavities, their bills are formed strong, very hard, and wedge-like at the end; Dr Derham observes, that a neat ridge runs along the top, as if an artist had designed it for strength and beauty. Yet it has not power to penetrate a sound tree; their perforation of any tree is a warning to the owner to throw it down. Their legs are short, but strong; their thighs very muscular; their toes disposed two backward, two forward; the feathers of the tail very stiff, sharp pointed, and bending downwards. The three first circumstances admirably concur to enable them to run up and down the sides of trees with great security; and the strength of the tail supports them firmly when they continue long in one place, either where they find plenty of food, or while they are forming an access to the interior part of the timber. This form of the tail makes their flight very awkward, as it inclines their body down, and forces them to fly with short and frequent jerks when they would ascend, or even keep in a line. This species feeds oftener on the ground than any other of the genus: all of them make their nests in the hollows of trees; and lay five or six eggs, of a beautiful semi-transparent white. These birds sometimes build in a hollow asp or other tree, 15 or 20 feet from the ground. The male and female take it by turns to bore through the living part of the wood, till they come to the rotten part, wherein, after being hollowed out to a proper depth, they lay their eggs, which are generally greenish, with small black spots. These holes are so deep, that a man may thrust his whole arm down one of them till he reach the eggs. The young ones climb up and down the trees before they can fly. The holes of the woodpecker are as perfectly round as if made by a pair of compasses. Nuthatches, starlings, and bats, frequently build in these holes when deserted. Both Frisch and Klein mistake in saying that the females have not the red crown, for even the young ones in the nest have the appearance of it; but they do not become of a full red till after the first moult. They are fond of bees, and make great havock among them. Salerne says they are found in the markets of Italy. In Sir A. Lever's museum there is a variety of this bird of a straw colour, except the crown, which is faintly marked with red.

PIDAURA, a town of European Turkey, in the Morea, anciently called **EPIDAUROS**; seated on the W. coast of the Gulf of Engia, 25 miles E. of Napoli di Romania. Lon. 41. 8. E. of Ferro. Lat. 37. 40. N.

PIDDLE, a river of Dorsetshire, called also **TRENT**, which runs into the sea at Pool, a little below Wareham. Along its banks are situated—

PIDDLE-HINTON, PIDDLE-MUSTERTON, PID-

DLE PARVA, PIDDLE-TOWN, PIDDLE-TRENT-HIDE, and some other villages.

* **To PIDDLE**. *v. n.* [This word is obscure in its etymology. *Skinner* derives it from *picciolo*, Italian; or *petit*, Fr. little. Mr *Lye* thinks it the diminutive of the Welsh *breyta*, to eat; perhaps it comes from *peddle*, for *Skinner* gives for its primitive signification, to deal in little things.] 1. To pick at table; to feed squeamishly, and without appetite.—

To *piddle* like a lady breeding. *Swift.*

2. To trifle; to attend to small parts rather than to the main. *Ainsl.*

* **PIDDLER**. *n. s.* [from *piddle*] 1. One that eats squeamishly, and without appetite. 2. One who is busy about minute things.

* **PIE**. *n. s.* [This word is derived by *Skinner* from *beizum*, to build, that is to build of paste; by *Junius* derived by contraction from *pastry*; if pasties, doubled together without walls, were the first pies, the derivation is easy from *pie*, a foot; as in some provinces, an apple *pastry* is still called an apple foot.] 1. Any crust baked with something in it.—

No man's *pie* is freed

From his ambitious finger. *Shak.*

—Mincing of meat in *pies* saveth the grinding of the teeth. *Bacon*.—They have bought more editions of his works, than would lay under all their *pies* at a lord mayor's Christmas. *Dryden*.—

From thence of course the figure will arise,

And elegance adorn the surface of your *pies*. *King.*

Eat beef or *pie*-crust, if you'd serious be. *King.*

2. [*Pica*, Lat.] A mag-pie; a parti-coloured bird.—

The *pie* will discharge thee for pulling the reft. *Tupper.*

Chattering *pies* in dismal discord sung. *Shak.*

Who taught the parrot human notes to try,

Or with a voice endu'd the chatt'ring *pie*? *Dryd.*

3. The old popish service book, so called, as is supposed, from the different colours of the text and rubric. 4. Cock and *pie* was a slight expression in *Shakespeare's* time, of which I know not the meaning.—

Mr Slender, come; we stay for you.—

—Ill eat nothing, I thank you, Sir.—

—By cock and *pie*, you shall not chuse, Sir; come, come. *Shak. Merry Wives.*

* **PIEBALD**. *adj.* [from *pie*.] Of various colours; diversified in colour.—

It was a parti-coloured drefs,

Of patched and *piebald* languages. *Hudibras.*

—They would think themselves miserable in a patched coat, and yet contentedly suffer their minds to appear abroad in a *piebald* livery of coarse patches and borrowed shreds. *Locke*.—They are pleased to hear of a *piebald* horse, that is strayed out of a field near Ilington. *Spektator*.—

Peel'd, patch'd, and *piebald*, linsley-woolsey brothers,

Grave mummings!

(1.) * **PIECE**. *n. s.* [*piece*, Fr.] 1. A patch. *Ainsl.*

2. A part of the whole; a fragment.—Bring it out *piece* by *piece*. *Ezekiel*, xxiv. 26.—The chief captain, fearing lest Paul should have been pulled in *pieces* of them, commanded to take him by force.

force. *ABs.*—Are they not manifest fragments and pieces of these greater masses? *Burnet.*—A man that is in Rome can scarce see an object that does not call to mind a piece of a Latin poet or historian. *Addison.* 3. A part.—It is accounted a piece of excellent knowledge, to know the laws of the land. *Tillotson.* 4. A picture.—If unnatural, the finest colours are but dawning, and the piece is a beautiful monster at the best. *Dryden.*—

Each heavenly piece unwear'd we compare.

Pope.

5. A composition; performance.—He wrote several pieces. *Addison.* 6. A single great gun.—

A piece of ord'nance 'gainst it I have plac'd.

Shak.

—Many of the ships have brass pieces, whereas every piece at least requires four gunners to attend it. *Raleigh.*—Pyrrhus, with continual battery of great pieces, did batter the mount. *Knolles.* 7. A hand gun.—When he is put to a piece or a pike, he maketh as worthy a soldier as any nation he meeteth with. *Spenser.*—The ball goes on in the direction of the stick, or of the body of the piece out of which it is shot. *Cheyne.* 8. A coin; a single piece of money.—

Boileau, for eight hundred pieces

Makes Lewis take the wall of Jove.

Prior.

9. In ridicule or contempt: as, a piece of a lawyer or a smatterer. 10. A PIECE. To each.—I demand, concerning all those creatures that have eyes and ears, whether they might not have had only one eye, and one ear a piece. *More against Atheism.* 11. Of a PIECE with. Like; of the same sort; united; the same with the rest.—

All seems uniform and of a piece. *Roscommon.*

—When Jupiter granted petitions, a cockle made request that his house and his body might be all of a piece. *L'Estrange.*—My own is of a piece with his. *Dryden.*—I appeal to my enemies, if I or any other man could have invented one which had been more of a piece. *Dryden.*—

Now she is gone, the world is of a piece.

Dryden.

—Nothing but madness can please madmen, and a poet must be of a piece with the spectators, to gain a reputation. *Dryden.*

(2.) PIECE, in matters of money, signifies sometimes the same thing with species; and sometimes, by adding the value of the pieces, it is used to express such as have no other particular name.

(3.) PIECE is also a kind of money of account, or rather a manner of accounting used among the negroes on the coast of Angola in Africa. See MONEY.

(4.) PIECE, in heraldry, denotes an ordinary or charge. The honourable pieces of the shield are the chief, fess, bend, pale, bar, cross, saltier, chevron, and in general all those which take up one third of the field, when alone, and in what manner soever it be. See HERALDRY.

(5.) PIECE OF EIGHT. See DOLLAR, § 2; and MONEY, § 9.

(6.) PIECES, in the military art, include all sorts of great guns and mortars. Battering pieces are the larger sort of guns used at sieges for making the breaches; such are the 24 pounder and culverine, the one carrying a 24 and the other an 18

pound ball. Field-pieces are 12 pounders, demiculverines, 6 pounders, sakers, minions, and 3 pounders, which march with the army, and encamp always behind the second line, but in day of battle are in the front. A soldier's firelock is likewise called his piece.

(1.) * To PIECE, v. a. [from the noun.] 1. To enlarge by the addition of a piece.—

I speak too long, but 'tis to piece the time,

To draw it out in length.

Shak.

If aught within that little seeming substance,
Or all of it with our displeasure piec'd,

And nothing more may fitly like your grace,

She is yours.

Shak.

Let him that was the cause of this have power

To take off so much grief from you as he

Will piece up in himself.

Shak.

—Plant it with women as well as men, that it may spread into generations, and not be pieced from without. *Bacon.* 2. To join; to unite. 3. To PIECE out. To increase by addition.—He pieces out his wife's inclination. *Shak.*—Whether the piecing out of an old man's life is worth the pains, I cannot tell. *Temple.*

(2.) * To PIECE, v. n. [from the noun.] To join; to coalesce; to be compacted.—He was more in the present speech of the people, and it pieced better and followed more close upon the bruit of Plantagenet's escape. *Bacon.*

* PIECELESS. adj. [from piece.] Whole; compact; not made of separate pieces.—

Religion's types the pieceless centers flow,

And are in all the lines which all ways go. *Donne.*

(1.) * PIECEMEAL. adv. [piece and meal; a word in Saxon of the same import.] In pieces; in fragments.—

He brooke his helme, full where his plume
did stand,

On which it piece-meale brake.

Chapman.

Why did I not his carcase piecemeal tear,

And cast it in the sea.

Denham.

I'll be torn piecemeal by a horse,

Ere I'll take you for better or worse.

Hudibras.

—Neither was the body then subject to distempers, to die by piecemeal. *South.*

Piecemeal they win this acre first, then that.

Pope.

(2.) * PIECEMEAL. adj. Single; separate; divided.—This by a more compendious impiety, shoots at his very being, and, as if it scorned these piecemeal guilts, sets up a single monster big enough to devour them all. *Gov. of the Tongue.*—Stage editors printed from the common piecemeal written parts in the playhouse. *Pope.*

* PIECER. n. s. [from piece.] One that pieces.

* PIED. adj. [from pie.] Variegated; particoloured.—Such as have their feathers of pied, orient, and various colours. *Abbot.*—

All the yeanelings, which were streak'd and pied;

Should fall as Jacob's hire.

Shak.

—Pied cattle are spotted in their tongues. *Bacon.*

The wing of a pied butterfly.

Dryden.

Meadows trim with daisies pied.

Milton.

PIEDE, or PIETE, a town of Mexico.

Y y y

PIEDMONT,

PIEDMONT, a country of Italy, with the old title of a *principality*; which before the late revolutionary war, belonged to the king of Sardinia, but is now annexed to the imperial French empire, and divided into six departments. It was bounded on the N. by Savoy and Italy; on the W. by France; on the S. by the Mediterranean and Genoa; and on the E. by the late duchies of Montferrat and Milan; extending about 150 miles from N. to S. but much less from E. to W. It is called Piedmont, in Latin *Pedemontium*, from its situation at the foot of the mountains, or Alps, which separate France from Italy. It is in some parts mountainous, but is everywhere very fruitful. The plains produce fine corn, Turkey wheat, which serves for bread, and with which people of the middle rank mix rye; the pods are used for fuel, and the stalks being thick, serve to mend the roads. The hills abound with vines, which afford plenty of wine, very luscious when new, especially the white. There is also a tartish red wine, called *vino brusco*, said to be very wholesome for fat people. The sweet wine is recommended as a stomachic. The neighbourhood of Turin is famous for fine fruits, and many long walks of chestnut and mulberry trees. Truffles or subterraneous mushrooms grow here in great abundance. Some are black, others white, marbled with red. Their price is rated according to their size. Sometimes they are found of 12 or 14 pounds weight; and many country people earn from 60 to 70 dollars a-year merely by digging for them. The trade in cattle is said to bring into Piedmont no less than three millions of livres per annum. The cultivation of silk is also a profitable article, the Piedmontese silk being, on account of its fineness and strength, esteemed the best in Italy. The Piedmontese gentry breed vast numbers of silk worms, under the care of their tenants, who have the eggs and mulberry leaves delivered to them, and in return they give half the silk to their masters. Piedmont was formerly divided into 11 small provinces: Piedmont Proper, the valleys between France and Italy, the valley of Saluzzo, the county of Nice, the marquisate of Susa, the duchy of Aosta, the Canoscé, the lordship of Vercelli, the county of Asti, and the Langes. It was formerly considered as a part of Lombardy, as it lies at the foot of the Alps, which separate France from Italy. It contains many high mountains, among which there are rich and fruitful valleys, as pleasant and populous as any part of Italy. In the mountains are mines of several kinds, and the forests afford a great deal of curious game, among which the *sumor* is an useful animal. "The mules (says Mr Watkins) are very fine in this country; but the inhabitants have other beasts, or rather monsters, which they find very serviceable, though vicious and obstinate. These are produced by a cow and an ass, or mare and bull, and called *sumarres*, or *gimerri*." The chief trade of this country consists in hemp and silk. The silk worm thrives so well, that many peasants make above 100 lb. of silk annually; and it is not only abundant, but universally known to be stronger and finer than any in Italy. They also trade in corn, rice, wine, fruits, flax, and cattle. The chief river of

Piedmont is the Po, which flows out of Mount Viso. The river Sesia, the Doria, Baltea, the ancient Stura, the Tanaro, and several others, run into it. The language of the Piedmontese is a mixture of French and Italian. In this principality there were before the revolution about 50 earldoms, 15 marquises, many lordships, and 20 abbeys. Turin is the chief city. See **TURIN**. The number of inhabitants, Mr Watkins says, in Piedmont and Savoy, (now the department of MONT BLANC), amounts to 2,695,727 souls, of which Turin contains about 77,000. During the late war, this country was repeatedly over-run by the troops of the belligerent powers. In November 1798 the king of Sardinia left Turin, and took refuge in the island of Sardinia; soon after which his whole territories in Piedmont, MONTFERRAT, &c. were taken possession of by the French; and erected into a republic. This form of government, however, was soon overthrown by the Austrians, who reduced the whole country except a few forts, in summer 1799; but after the battle of Marengo, in June 1800, the whole of these territories again submitted to the French. It was not, however, till the 11th September 1802, that their fate was finally determined, by a decree of the French Conservative Senate; whereby they were irrevocably annexed to France, and divided into six departments, named the Po, MARENGO, DORIA, SEZIA, STURA, and TANARO; the capitals of which are Turin, Alexandria, Ivica, Vercelli, Coni, and Asti. Of these, the department of the Po sends 4 deputies, Marengo 3, Doria 2, Sesia 2, Stura 3, and Tanaro 3, to the Legislative Assembly.

(1.) **PIEDMONTESE**. *adj.* Of or belonging to Piedmont.

(2.) **PIEDMONTESE**. *n. f.* The inhabitants of Piedmont. The Piedmontese have more sense than the Savoyards, but are not so sincere. Some authors represent them as lively, artful, and witty, the inhabitants of the mountain of Aosta excepted, who are farther distinguished by large wens, as well as their horses, dogs, and other animals.

* **PIEDNESS**. *n. f.* [from *pie*.] Variegation; diversity of colour.

There is an art, which in their *pie*ness shares
With great creating nature. *Shak.*

* **PIELED**. *adj.* Perhaps for *peeled* or bald; or *piled*, or having short hair.

Pie'd priest, dost thou command he be shut out?

—I do. *Shak.*

PIENES, a small island of Japan, over against the harbour of Saccai, famed not only for the beauty of its walks, to which crowds of people resort from the city, but for a deity worshipped there, to which vast numbers of persons devote themselves. They go from his temple to the sea side, where they enter into a boat provided for the purpose; then, launching into the deep, they throw themselves overboard, loaded with stones, and sink to the bottom. The temple of that deity, which is call *Canon*, is very large and lofty, and so are many others in the city itself; one in particular, dedicated to the gods of other countries, is thought the finest in the whole empire.

(1.) * **PIEPOWDER**

(1.) * **PIEPOWDER COURT.** *n. f.* [from *pied* foot, and *poudre*, dusty.] A court held in fairs for redress of all disorders committed therein.

(2.) **PIEPOWDER COURT,** or **PIEPOUDRE COURT,** the lowest, and at the same time the most expeditious, court of justice known to the law of England. It is called **PIEPOUDRE** (*curia pedis pulverizati*), from the dusty feet of the suitors; or, according to Sir Edward Coke, because justice is there done as speedily as dust can fall from the foot; upon the same principle that justice among the Jews was administered in the gate of the city, that the proceedings might be the more speedy as well as public. But the etymology given by a learned modern writer is much more ingenious and satisfactory; it being derived, according to him, from *pied puldreux*, a *pedlar*, in old French, and therefore signifying the court of such petty chapmen as resort to fairs or markets. It is a court of record incident to every fair and market; of which the steward of him who has the toll of the market is the judge. It was instituted to administer justice for all commercial injuries done in that fair or market, and not in any preceding one. So that the injury must be done, complained of, heard, and determined, within the compass of one and the same day, unless the fair continues longer. The court hath cognizance of all matters of contract that can possibly arise within the precinct of that fair or market; and the plaintiff must make oath that the cause of an action arose there. From this court a writ of error lies, in the nature of an appeal, to the courts at Westminster.

(1.) * **PIER.** *n. f.* [*pierre*, Fr.] The columns on which the arch of a bridge is raised.—For *piers* sometimes wet, sometimes dry, take elm. *Bacon*.—The English took the galley, and drew it to shore, and used the stones to reinforce the *pier*. *Hayward*.—The bridge, consisting of four arches, is the length of 622 English feet and an half; the dimensions of the arches are as follows, in English measure; the height of the first arch 109 feet, the distance between the *piers* 72½ feet; in the second arch, the distance of the *pier* is 230 feet; in the third the distance is 109 feet; in the fourth the distance is 138 feet. *Arbutnot*.

(2.) **PIER**, in building, denotes a mass of stone, &c. opposed by way of fortrefs to the force of the sea, or a great river, for the security of ships that lie at harbour in any haven.

(3.) **PIERS OF A BRIDGE.** See **BRIDGE**, § I. 3.

(1.) **PIERA**, in ancient geography, a fountain of Peloponnesus, between Elis and Olympus. *Pauf.* v. c. 16.

(2.) **PIERA**, in modern geography, a town of Spain, in Catalouia, sixteen miles north-west of Barcelona.

PIERBACH, a town of Austria, sixteen miles NNW. of Grein.

PIERCE, James. See **PEIRCE**.

(1.) * **To PIERCE.** *v. a.* [*percer*, Fr.] 1. To penetrate; to enter; to force a way into.—

Steed threatens steed in high and boastful neighs,

Piercing the night's dull ear. *Shak.*

—They have *pierced* themselves through with many sorrows. 1 *Tim.* vi. 10.—

With this fatal sword, on which I died,
I *pierce* her opened back or tender side. *Dryden*.
The glorious temple shall arise,
And with new lustre *pierce* the neighb'ring skies. *Prior*.

2. To touch the passions; to affect.—

Did your letters *pierce* the queen? *Shak.*

(2.) * **To PIERCE.** *v. n.* 1. To make way by force into, or through any thing.—

Her tears will *pierce* into a marble heart. *Shak.*
—There is that speaketh like the *piercings* of a sword.—*Prov.* xii. 18.—Short arrows, called *sprights*, were discharged out of muskets, and would *pierce* through the sides of ships, where a bullet would not *pierce*. *Bacon*. 2. To strike: to move; to affect.—

Then I'll commend her volubility;

And say she uttereth *piercing* eloquence. *Shak.*

3. To enter; to dive as into a secret.—She would not *pierce* further into his meaning than himself should declare. *Sidney*.—All men knew Nathaniel to be an Israelite; but our Saviour, *piercing* deeper, giveth further testimony of him. *Hooker*. 4. To affect severely.—They provide more *piercing* statutes daily to chain up the poor. *Shak.*

PIERCEA. See **RIVINA**.

* **PIERCER.** *n. f.* [from *pierce*.] 1. An instrument that bores or penetrates.—

Cart, ladder, and wimble, with *piercer* and pod. *Tusser*.

2. The part with which insects perforate bodies.

—The hollow instrument, terebra, we may English *piercer*, wherewith many flies are provided. *Ray*.

3. One who perforates.

* **PIERCINGLY.** *adv.* [from *pierce*.] Sharply.

* **PIERCINGNESS.** *n. f.* [from *piercing*.] Power of piercing.—We contemplate the vast reach and compass of our understanding, the prodigious quickness and *piercingness* of its thought. *Derham*.

(1.) **PIERIA**, in ancient geography, a district of Macedonia, contained between the mouths of the rivers Ludias and Peneus; extended by Strabo beyond the Ludias, to the Axios on the N. and on the S. no farther than the Aliacmon, along the W. side of the Sinus Thermaicus.

(2.) **PIERIA** of Syria, the N. part of Seleucia, on the *Antiochena*, situated on the Sinus Iflicus, and lying next Cilicia on the NW.

(1.) **PIERIDES**, in fabulous history, the daughters of Pierus, a Macedonian prince, who, presuming to dispute with the Muses for the prize of poetry, were turned into magpies. They were also called **PEONIDES**.

(2.) **PIERIDES**, a name of the Muses, from mount Pieris in Thessaly, which was consecrated to them; or, according to others, from Pierus, a Thessalian poet, who was the first who sacrificed to them. See **PIERIS**.

PIERINO DEL VAGA, an eminent Italian painter, born of poor parents in Tuscany about the year 1500. He was placed apprentice with a grocer in Florence; but a painter named *Vaga*, taking him to Rome, he was called *Del Vaga*, from living with him, his real name being *Buonacorsi*. After Raphael's death, he joined with Julio Romano and Francis Penni to finish the works in the Vatican, which were left imperfect by their common master; and, to confirm their friendship, married

married Penni's sister. He gained the highest reputation by his performances in the palace of prince Doria at Genoa; but the multiplicity of his business drained his spirits in the flower of his age; for he died in 1547. Of all Raphael's disciples, Pierino kept the character of his master longest, i. e. his exterior character and manner of designing; for he fell very short of the fineness of Raphael's thinking.

PIERIS, in ancient geography, a mountain which is thought to have given name to Pieria of Macedonia; taking its name from Pierus, a poet, who was the first that sacrificed to the Muses, thence called *Pierides*.

PIEROUAGAMIS, a nation of North American Indians, who inhabit the NW. bank of Lake St John, in Lower Canada.

(1.) PIERRE D'AUTOMNE, a French name, translated from the Chinese, of a medicinal stone, celebrated in the east for curing all disorders of the lungs. Many think it had its name of the *autumn stone* from its being only to be made at that season of the year; but it certainly may be made at all times. The Chinese chemists refer the various parts of the body to the several seasons of the year, and thus they refer the lungs to autumn. This is evident in their writings, and thus the stone for diseases of the lungs came to be called *autumn stone*. It is prepared as follows: They put 30 pints of the urine of a strong and healthy young man into a large iron pot, and set it over a gentle fire. When it begins to boil, they add to it, drop by drop, about a large tea-cup full of rape oil. They then leave it on the fire till the whole is evaporated to a thick substance like black mud. It is then taken out of the pot, and laid on a flat iron to dry, so that it may be powdered very fine. This powder is moistened with fresh oil, and the mass is put into a double crucible, surrounded with coals, where it stands till it be thoroughly dried again. This is again powdered, and put into a china vessel, which being covered with silk cloth and a double paper, they pour on it boiling water, which makes its way, drop by drop, through these coverings, till so much is got in as is sufficient to reduce it to a paste. This paste is well mixed together in the vessel it is kept in, and this is put into a vessel of water, and the whole set over the fire. The matter thus becomes again dried in *balneo marie*, and is then finished. *Observ. sur les Cout de P. Asie*, p. 258.

(2.) PIERRE, ST, Eustace DE, a brave French patriot, who devoted his life to save his country. See CALAIS, N° 1.

(3.) PIERRE, ST, a large river in North America, scarcely inferior to the Rhine or the Danube, and navigable to its source. It falls into the Mississippi.

(4.) PIERRE, ST, or ST PETER'S, the capital of Martinico, was built in 1663, to overawe the mutineers of the island, who rebelled against its proprietors, the second West India company, who were at the same time the proprietors of all the French Antilles. It is situated on the west side of the island. The town extends along the shore, and a battery that commands the road is erected on the west side, which is washed by the river Royolan, or St Peter. The town is divided into

three wards; the middle, which is properly St Peter's, begins at the fort, and runs west to the battery of St Nicholas. Under the walls of the second ward ships at anchor ride more securely than under the fort, on which account this ward is called the *Anchorage*. The third ward, called the *Gallery*, extends along the sea-side from Fort St Peter to the Jesuit's River, and is the most populous part of the city. The houses of St Peter's ward are neat, commodious, and elegant, particularly those of the governors, and the other officers. The parish church of St Peter is a magnificent stone building which belonged to the Jesuits, with a noble front of the Doric order. The church of the Anchorage, which belongs to the Jacobine friars, is likewise of stone. It is a place of considerable trade, and is built with tolerable regularity. The houses are mostly constructed of a grey pumice-stone or lava, which is found on the strand; and the high street is, according to Dr Isert, above an English mile in length. It is supposed to contain about 2000 houses, and 30,000 inhabitants, including negroes. St Pierre, with the whole of the island, was taken from the French in March 1794, by the British land and sea forces under Sir Charles Grey and Sir John Jervis; 15 vessels loaded with the produce of the island, and of great value, were captured, 71 of which were in the harbour of St Pierre. But the island was restored by the treaty of peace in 1801.

(1.) PIERUS, the father of the nine PIERIDES.

(2-6.) PIERUS, in geography, 1. A mountain of Thessaly sacred to the Muses: 2. A town of Thessaly (*Pauf.* vii. 22.). 3. A river of Peloponnesus: 4, 5. A mountain and lake of Macedonia.

PIETAS, a deity of the Romans. See PIETY, N° 2.

(1.) PIETISTS, a religious sect sprung up among the Protestants of Germany, a kind of mean between the Quakers of England and the Quietists of the Romish church. They despise all sorts of ecclesiastical polity, all school theology, and all forms and ceremonies, and give themselves up to contemplation and mystic theology. Many gross errors are charged on the Pietists, in a book entitled *Manipulus Observationum Antipietisticarum*: but they have much of the air of polemical exaggeration. Indeed there are Pietists of various kinds: Some running into gross illusions, and carrying their errors to the overturning of a great part of the Christian doctrine, while others are only visionaries; and others are very honest and good, though perhaps misguided, people. They have been disgusted with the coldness and formality of other churches, and have thence become charmed with the fervent piety of the Pietists, and attached to their party, without giving into the grossest of their errors. See *Mosheim's Ecl. History*, vol. iv. p. 454.

(2.) PIETISTS, otherwise called the *Brethren and Sisters of the Pious and Christian Schools*, a society formed in the year 1678 by Nicholas Barre, and obliged by their engagements to devote themselves to the education of poor children of both sexes.

PIETOLA, a town of the Italian republic, in the dep. of the Mincio, anciently called *Andes*, within two Italian miles of Mantua, famous for being

being the birth-place of Virgil; on which account Bonaparte granted the citizens an indemnification for their losses during the war, and erected an obelisk to the poet's memory, in 1797.

PIETRA, the name of 11 towns of Naples, 1 of Etruria, and 1 of Corsica.

PIETRO, ST., an island in the Mediterranean, anciently called *Hieracum*, 7 miles from the S. coast of Sardinia; 15 miles long and 3 broad. It was taken by the French republicans in 1793, but retaken soon after. Lon. 16. 18. E. Ferro. Lat. 39. 8. N.

(1.) * PIETY. *n. f.* [*pietas*, Lat. *piet  *, Fr.] 1. Discharge of duty to God.—What *piety*, pity, fortitude, did *Æneas* possess beyond his companions? *Peacock on Poetry*.—

'Till future infancy, baptiz'd by thee,
Grow ripe in years, and old in *piety*. *Prior*.
There be who faith prefer and *piety* to God. *Milton*.

—Praying for them would make them as glad to see their servants eminent in *piety* as themselves. *Law*. 2. Duty to parents or those in superior relation.—

Pope's filial *piety* excels,
Whatever Grecian story tells. *Swift*.

(2.) PIETY is a virtue which denotes veneration for the Deity, and love and tenderness to our friends. This distinguished virtue, like many others, received among the Romans divine honours, and was one of their deities. *Acilius Glabrio* first erected a temple to this divinity, which he did upon the spot on which a woman had fed with her own milk her aged father, who had been imprisoned by order of the senate, and deprived of all aliments. The story is well known, and is given at length in books which are in the hands of every school-boy. (See FILIAL PIETY, also *Cicero de divo*, 1. and *Valerius Maximus*, 5. c. 4.) If piety was thus practised and thus honoured in Heathen antiquity, it ought not to be less so among Christians, to whom its nature is better defined, and to the practice of which they have motives of greater cogency.

(3.) PIETY, FILIAL. The following example of filial piety is taken from *Du Halde's* description of China: "In the commencement of the dynasty of the Tang, *Loutao-tsong*, who was disaffected to the government, being accused of a fault which touched his life, obtained leave from those who had him in custody, to perform the duties of the Tao to one of his deceased friends. He managed matters so well, that giving his keepers the slip, he fled to the house of *Lou Nan-kin*, with whom he had a friendship, and there hid himself. *Lou Nan-kin*, notwithstanding the strict search that was made, and the severity of the court against those who concealed prisoners that have escaped, would not betray his friend. However, the matter being discovered, *Lou Nan-kin* was imprisoned; and they were just on the point of proceeding against him, when his younger brother presenting himself before the judge, said, *It is I, Sir, who have bidden the prisoner; it is I who ought to die, and not my elder brother*. The eldest maintained, that his younger brother had accused himself wrongfully, and was not at all culpable. The judge who was a person of great sagacity, sifted both parties so effectually, that he not only discov-

ered that the younger brother was innocent, but even made him confess it himself; *It is true, Sir, said the youngest all in tears, I have accused myself falsely; but I have very strong reasons for so doing. My mother has been dead for some time, and her corpse is not yet buried; I have a sister also who is marriageable, but is not yet disposed of: these things which my brother is capable of managing, I am not, and therefore desire to die in his stead. Vouchsafe to admit my testimony*. The commissioner gave an account of the whole affair to the court, and the emperor pardoned the criminal."

(1.) * PIG. *n. f.* [*bigge*, Dutch.] 1. A young sow or boar.—Some men there are love not a gaping pig. *Shak*.—

Alba, from the white sow nam'd,
That for her thirty sucking pigs was fam'd. *Dryden*.

—The flesh-meats of an easy digestion, are pigs, lamb, rabbit, and chicken. *Floyer on the Humours*. 2. An oblong mass of lead or unforged iron, or mass of metal melted from the ore is called, I know not why, *sow-metal*, and pieces of that metal are called *pigs*.—

A nodding beam or pig of lead,
May hurt the very ablest head. *Pope*.

(1.) PIG, in zoology. See *SVS*.
(3.) PIG, GUINEA. See *CAVIA*, N   V.
(4.) PIG IRON. See *IRON*,    12.
(5.) PIG NUT. See *BUNIUM*.
(6.) PIG OF LEAD, the 8th part of a fother, amounting to 250 pounds weight.

* To PIG. *v. a.* [from the noun.] To farrow; to bring pigs.

PIGALLE, John Baptist, a celebrated sculptor, born at Paris in 1714. He became chancellor of the academy of painting, and knight of St Michael. He went to Italy, and returned inspired with the genius of the great artists. His most valued works are a Mercury and a Venus, which he made by order of Lewis XV. as presents to the K. of Prussia. He also carved a statue of Voltaire, with many other admired pieces. He died at Paris, in 1785.

PIGANIOL DE LA FORCE, John Aymar De, a native of Auvergne, of a noble family, who applied himself with ardour to the study of geography, and of the history of France. He also travelled for improvement. His chief works are, 1. An Historical and Geographical Description of France; the largest edition is that of 1753, in 18 vols. 12mo. 2. A Description of Paris, in 10 vols. 12mo; of which he published an abridgement, in 2 vols. 12mo. 3. A Description of the Castle and Park of Versailles, Marly, &c. in 2 vols. 12mo. Piganioil had also a concern with Abb   Nadal in the *Journal of Trevoux*. He died at Paris in Feb. 1753, aged 80. He was as much respected for his manners as for his talents. To a profound and varied knowledge he united a great probity and honour, and all the politeness of a courtier.

(1.) * PIGEON. *n. f.* [*pigeon*, Fr.] A fowl bred in a cote, or a small house; in some places called *dovecote*.—

This fellow picks up wit as pigeons peas. *Shak*.

—A turtle dove and a young pigeon. *Gen*. xv. 9.—Perceiving that the pigeon had lost a piece of her tail,

tail, through the next opening of the rocks rowing with all their might, they passed safe, only the end of their poop was bruised. *Raleigh*.—

The fearful pigeon flutters in her band.

Dryden.

—See the cupola of St Paul's covered with both sexes like the outside of a pigeon-house. *Addison*.—

A pigeon-house or oven,

To bake one loaf, to keep one dove in. *Swift*.

(2.) PIGEON. See COLUMBA, § I, 1—7.

(3.) PIGEON, Peter Charles Francis, curate and afterwards rector or vicar of Bayeux, one of the numberless victims who fell a sacrifice to Jacobin rage and infidelity, in the beginning of the French revolution. Although a man of not only sincere piety, but of uncommon mildness and humanity, yet, because he refused to take the oaths imposed by the republicans, he and his family were at first insulted and persecuted in the cruellest manner, and he himself was at last murdered on the 20th Aug. 1793 in his 38th year.

(4.) PIGEON, in geography, an island in Port-Royal Bay on the coast of Martinico, strongly fortified.

(5, 6.) PIGEON, BIG and LITTLE, two rivers of Tennessee, which rise in the Great Iron Mountains and fall into French Broad River; the latter 3 miles below the mouth of the Nolachucky, the former 9 miles above little Pigeon.

(7.) PIGEON, CARRIER. See CARRIER, § 3; and COLUMBA, § I, N° 4.

(8.) PIGEON PEA. See CYTISUS, § I, N° 2.

(1.) * PIGEON-FOOT. *n. f.* [*geranium*.] An herb. *Ainsworth*.

(2.) PIGEON-FOOT is a species of GERANIUM.

(1.) PIGEON-HOUSE, *n. f.* a house erected full of holes within for the keeping, breeding, &c. of pigeons, otherwise called a DOVE-COTE. Any lord of a manor may build a pigeon-house on his land, but a tenant cannot do it without the lord's licence. When persons shoot at or kill pigeons within a certain distance of the pigeon-house, they are liable to pay a forfeiture. For a pigeon-house, no situation is more proper than the middle of a spacious court-yard, because pigeons are naturally of a timorous disposition, and the least noise they hear frightens them. As to its form, the round should be preferred to the square ones; because rats cannot so easily come at them in the former as in the latter. It is also much more commodious; because you may, by means of a ladder turning upon an axis, visit all the nests in the house, without the least difficulty; which cannot be so easily done in a square house. To hinder rats from climbing up the outside of the pigeon-house, the wall should be covered with tin plates to a certain height; about a foot and a half will be sufficient; but they should project out 3 or 4 inches at the top, to prevent their clambering any higher. The pigeon-house should be placed near water, that the pigeons may carry it to their young ones; and their carrying it in their bills will warm it, and render it more wholesome in cold weather. The boards that cover the pigeon-house should be well joined together, that no rain may penetrate through it; and the whole building should be covered with hard plaf-

ter, and white-washed within and without, white being the most pleasing colour to pigeons. There must be no window, or other opening in the pigeon-house to the E. they should always face the S. for pigeons are very fond of the sun, especially in winter. The nests or covers in a pigeon-house should consist of square holes made in the walls, of a size sufficient to admit the cock and hen to stand in them. The first range of these nests should not be less than four feet from the ground, that the wall underneath being smooth, the rats may not be able to reach them. These nests should be placed in quincunx order, and not directly over one another. Nor must they be continued any higher than within three feet of the top of the wall, and the upper row should be covered with a board projecting a considerable distance from the wall, for fear the rats should find means to climb the outside of the house.

(2.) PIGEON-HOUSE, a hill on the coast of New Zealand, abounding with pigeons. *Lon.* 209. 42. W. *Lat.* 39. 19. S.

(1.) PIGEON ISLAND, an island near the E. coast of Ceylon, 10 miles NNW. of Trinkamaly.

(2.) PIGEON ISLAND, an island 8 miles from the coast of Malabar, and 15 from Onore. *Lon.* 74. 6. E. *Lat.* 14. 1. N.

* PIGEONLIVERED. *adj.* [*pigeon* and *liver*.] Mild; soft; gentle.—

I am pigeonliver'd, and lack gall

To make oppression bitter.

Shak.

* PIGGIN. *n. f.* In the northern provinces, a small vessel.

PIGHIUS, Stephen Vinand, a learned antiquary, born at Campen in Overijssel, in 1520. He went to Rome, and was patronised by Card. Granvelle, who made him his librarian. The learned are indebted to him for the first good edition of *Valerius Maximus*, in 1585, 8vo. He became preceptor to Pr. Charles of Juliers, who dying, he wrote a panegyric upon him, on which his father Pr. William made him canon of Santen, where he died in 1604, aged 84. His *Annales, seu Fasti Romanorum Magistratum et Provincialium*, were published by Schottus in 1615, in 3 vols. fol.

* PIGHT. old preter. and part. pass. of *pitch*. Pitched: placed; fixed; determined. Not in use.

An hideous rounk is *pight*,

Of mighty Magnes stone.

Spenser.

The body big and might *pight*,

Thoroughly rooted and wondrous height.

Spenser.

Then brought she me into this desert vast,
And by my wretched lover's side me *pight*.

Spenser.

Stay yet, you vile abominable tents,
Thus proudly *pight* upon our Phrygian plains.

Shak.

When I disuaded him from his intent,

I found him *pight* to do it.

Shak.

(1.) * PIGMENT. *n. f.* [*pigmentum*, *Lat.*] Paint; colour to be laid on any body.—Consider about the opacity of the corpuscles of black pigments. *Boyle*.

(2.) PIGMENTS, preparations used by painters, dyers, &c. to impart colours to bodies, or to imitate

tate particular colours. See COLOUR-MAKING, and DYING.

(1.) **PIGMIES**, a people of Ethiopia. See ETHIOPIA, § 3.

(2.) **PIGMIES**, ISLE OF, an islet of Scotland, near Lewes, so named because bones resembling human bones, but of very small dimensions, have been dug up in it.

(3.) **PIGMY**. *n. f.* [*pigmeé*, Fr. *pygmaeus*, Lat. *πυγμαῖος*.] A small nation, fabled to be devoured by the cranes; thence any thing mean or inconsiderable: it should be written with a *y*, *pygmy*.—Of so low a stature, that, in relation to the other, they appear as *pigmies*. *Heylyn*.—

When cranes invade, his little sword and shield
The *pigmy* takes. *Dryden*.

—The critics may discover such beauties in the
ancient poetry, as may escape the comprehension
of us *pigmies* of a more limited genius. *Garth*.—

It might have been a *pigmy's* tomb. *Savitt*.

* **PIGNORATION**. *n. f.* [*pignora*, Lat.] The act of pledging.

PIGNORIUS, Lawrence, a learned Italian, born at Padua, in 1551, and bred an ecclesiastic. He made deep researches into antiquity, and published several curious works in Italian and Latin, particularly *Mensa Isaca*, on the antiquities of Egypt. The great Galileo procured him the offer of a professorship at Pisa, but he declined it. In 1630, he was made a canon in Treviso, but died of the plague in 1631.

(1.) * **PIGNUT**. *n. f.* [*pig* and *nut*.] An earth nut.—

I with my long nails will dig thee *pignuts*.

Shak.

(2.) **PIG-NUTS**. See BUNIUM.

* **PIGSNEY**. *n. f.* [*piga*, Sax. a girl.] A word of endearment to a girl. It is used by *Butler* for the eye of a woman, I believe, improperly.—

Shine upon me but benignly

With that one, and that other *pigsney*. *Hudib.*

PIGUS, in ichthyology, a species of leather-mouthed fish, very much resembling the common carp; being of the same shape and size, and its eyes, fins, and fleshy palate, exactly the same; from the gills to the tail there is a crooked dotted line; the back and sides are bluish, and the belly reddish. It is covered with large scales, from the middle of each of which there rises a fine pellucid prickle, which is very sharp. It is an excellent fish for the table, being perhaps preferable to the carp; and it is in season in the months of March and April. It is caught in lakes in some parts of Italy, and is mentioned by Pliny, though without a name. *Artdi* says it is a species of cyprinus, and he styles it the *cyprinus* called *piclo* and *pigus*.

* **PIGWIDGEON**. *n. f.* This word is used by *Drayton* as the name of a fairy, and is a kind of cant word for any thing petty or small.—

By Scotch invasion he was made a prey

To such *pigwidgeon* myrmidons as they.

Cleaveland.

PI-HAIROTH, a mouth or narrow pass between two mountains, called *Ghiroth* or *Eiroth*, and lying not far from the bottom of the W. coast of the Arabian gulph; before which mouth

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the children of Israel encamped, just before their entering the Red Sea. (*Wells*.)

PIISSKER, in ichthyology, is a fish of the *MUSTELA* kind, commonly called the *fissil mustela*, or *fissil fish*. They are generally found as long as a man's hand is broad, and as thick as one's finger; but they sometimes grow much longer: the back is grey with a number of spots and traverse streaks, partly black and partly blue; the belly is yellow, and spotted with red, white, and black; the white are the larger, the others look as if they were made with the point of a needle; and there is on each side a longitudinal black and white line. There are some fleshy excrescences at the mouth, which are expanded in swimming, but contracted when out of the water. These fishes run into caverns of the earth, in the sides of rivers, in marshy places, and penetrate a great way, and are often dug up at a distance from waters. Often, when the waters of brooks and rivers swell beyond their banks, and again cover them, they make their way out of the earth into the water; and when it deserts them, they are often left in vast numbers upon the ground, and become a prey to swine. It is thought to be much of the same kind with the *fissum* fish; and it is indeed possible that the *pæcilia* of *Schonefeldt* is the same.

(1.) * **PIKE**. *n. f.* [*picque*, Fr. his snout being sharp. *Skinner* and *Junius*.] 1. The luce or *pike* is the tyrant of the fresh waters: Sir Francis Bacon observes the *pike* to be the longest lived of any fresh water fish, and yet he computes it to be not usually above forty years; and others think it to be not above ten years: he is a solitary, melancholy and bold fish; he breeds but once a year, and his time of breeding or spawning is usually about the end of February, or somewhat later, in March, as the weather proves colder or warmer; and his manner of breeding is thus; a he and a she *pike* will usually go together out of a river into some ditch or creek, and the spawner casts her eggs, and the melter hovers over her all the time she is casting her spawn, but touches her not. *Walton's Angler*.—In a pound into which were put several fish and two *pikes*, upon drawing it some years afterwards there were left no fish, but the *pikes* grown to a prodigious size, having devoured the other fish and their numerous spawn. *Hale*.—

The *pike*, the tyrant of the floods. *Pope*.

2. [*Pique*, Fr.] A long lance used by the foot soldiers, to keep off the horse to which bayonets have succeeded.—

Beat you the drum that it speak mournfully,
Trail your steel *pikes*. *Shak.*

He wanted *pikes* to set before his archers.

Shak.

—Their *pikes* they strained in both hands, and therewith their buckler in the left, the one end of the *pike* against the right foot, the other breast high against the enemy. *Hayward*.—

A lance he bore with iron *pike*. *Hudibras*.

3. A fork used in husbandry; a pitch-fork.—

A *pike* to *pike* them up handsome to dree.

Tusser.

—Let us revenge this with our *pikes*. *Shak.* 4. Among turners, two iron springs between which any thing to be turned is fastened. Hard wood,

Z z z

prepared

prepared for the lathe with rasping, they pitch between the pikes. *Moxon.*

(2.) PIKE, in ichthyology. See *Esox*. The pike never swims in shoals as most other fishes do, but always lies alone; and is so bold and ravenous, that he will seize upon almost any thing less than himself. Instances of the voracity of these fishes are so numerous and well known, that it is unnecessary to quote them. They breed but once a year, in March. They are found in almost all fresh waters; but very different in goodness, according to the nature of the places where they live. The finest pikes are found in clear rivers; those in ponds and meres are inferior, and the worst are those of the fen ditches. They are very plentiful in these last places, where the water is foul and coloured; and their food, such as frogs and the like, plentiful but coarse; so that they grow large; but are yellowish and high belled, and differ greatly from those which live in the clearer waters. The fishermen have two principal ways of catching pikes, by the ledger, and the walking bait. The ledger bait is fixed in one certain place, and may continue while the angler is absent. This must be a live bait, a fish or frog; and among fish, the dace, roach, or gudgeon, are the best; of frogs, the only caution is to choose the largest and yellowest that can be met with. If the bait be a fish, the hook is to be stuck through the upper lip, and the line must be 14 yards at least in length; the other end of this is to be tied to a bough of a tree, or to a stick driven into the ground near the pike's haunt, and all the line wound round a forked stick except about half a yard. The bait will by these means keep playing so much under water, that the pike will soon lay hold of it. If the bait be a frog, then the arming wire of the hook should be put in at the mouth, and out at the side; and with a needle and some strong silk, the hind leg of one side is to be fastened by one stitch to the wire arming of the hook. The pike will soon seize this, and must have line enough to give him leave to get to his haunt and poach the bait. The trolling for pike is a pleasant method also of taking them: in this a dead bait serves, and none is so proper as a gudgeon. This is to be pulled about in the water till the pike seizes it; and then he is to have line enough, and time to swallow it: the hook is small for this sport, and has a smooth piece of lead fixed at its end to sink the bait; and the line is very long, and runs through a ring at the end of the rod, which must not be too slender at top. The art of feeding pikes, to make them very fat is by giving them eels; otherwise perches, while small, and their prickly fins tender, are the best food for them. Breams put into a pike-pond are a very proper food: they will breed freely, and their young ones make excellent food for the pike. The numerous shoals of roaches and ruds which are continually changing place, and often in floods get into the pike's quarters, afford food for them for a long time. Pikes, when used to be fed by hand, will come up to the very shore, and take the food that is given them out of the fingers of the feeder. It is wonderful to see with what courage they will do this, after a while practising; and it is very diverting when there are se-

veral of them nearly of the same size, to see what striving and fighting there will be for the best bits that are thrown in. The most convenient place is near the mouth of the pond, and where there is about half a yard depth of water; for, thus, the offal of the feedings will all lie in one place, and the deep water will serve for a place to retire into and rest in, and will be always clean and in order.

(3.) PIKE, in war, an offensive weapon, consisting of a wooden shaft, 12 or 14 feet long, with a flat steel head, pointed, called the *spear*. This weapon was long in use among the infantry; but now the bayonet, which is fixed on the muzzle of the firelock, is substituted in its stead.

(1.) To PIKE, *v. a.* To murder with a pike. This verb owes its origin and use in this sense, to the horrors of the French Revolution, when so many unfortunate prisoners were piked to death by *Septembriseurs* at Paris, without trial by judge or jury, in Sept. 1792. It is also used as an active verb, in husbandry, by *Tusser*, in the passage above quoted by Dr Johnson, under PIKE, § 1, *def.* 3.

(2.) To PIKE, *v. n.* To peep. *Chamder*. This sense is obsolete, as is also the active sense in which that poet also uses it.—To pick out, to pitch upon.

* PIKED. *adj.* [*piqué*, Fr.] Sharp; acuminate; ending in a point. In *Shakespeare*, it is used of a pointed beard.—

Why then I suck my teeth, and catechise

My piked man of countries. *Shak.*

* PIKEMAN. *n. f.* [*pike and man*.] A soldier armed with a pike.—Three great squadrons of pikemen were placed against the enemy. *Knoller*.

* PIKESTAFF. *n. f.* [*pike and staff*.] The wooden pole of a pike.—To me it is as plain as a *pikestaff*, from what mixture it is, that this daughter silently lowers, 't'other steals a kind look. *Tatler*.

(1.) PILA, in antiquity, was a ball variously made according to the different games in which it was to be used. Playing at ball was very common amongst the Romans of the first distinction, and was looked upon as a manly exercise, which contributed both to amusement and health. The pila was of four sorts: 1st, *Follis* or *balloon*; 2d, *Pila Trigonalis*; 3d, *Pila Pagonica*; 4th, *Harpastum*. All these come under the general name of pila. For the manner of playing with each of them, see the articles FOLLIS and TRIGONALIS.

(2.) PILA MARINA, or the SEA BALL, in natural history, a substance very common on the shores of the Mediterranean, and elsewhere. It is generally found in the form of a ball about the size of the balls of horse-dung, and composed of a variety of fibrillæ irregularly complicated. Various conjectures have been given of its origin by different authors. John Bauhine tells us, that it consists of small hairy fibres and straws, such as are found about the sea plant called *alga vitriariarum*; but he does not ascertain what plant it owes its origin to. Imperatus imagined it consisted of the exuvie both of vegetable and animal bodies. Mercatus is doubtful whether it be a congeries of the fibrillæ of plants, wound up into a ball by the motion of the sea-water, or whether it be not the workmanship of some sort of beetle living about the sea shore, and analogous to our common dung beetle's ball,

ball, which it elaborates from dung for the reception of its progeny. Schreckius says it is composed of the filaments of some plant of the reed kind: and Welchius supposes it is composed of the papirous part of the flowers of the reed. Maurice Joffman thinks it the excrement of the Hippopotamus; and others think it that of the sea calf. Klein, who had thoroughly and minutely examined the bodies themselves, and also what authors had conjectured concerning them, thinks that they are wholly owing to, and entirely composed of, the capillaments which the leaves, growing to the woody stalk of the *alga vitriariorum*, have when they wither and decay. These leaves, in their natural state, are as thick as a wheat straw, and they are placed so thick about the tops and extremities of the stalks, that they enfold, embrace, and lie over one another; and from the middle of these clusters of leaves, and indeed from the woody substance of the plant itself, there arise several other very long, flat, smooth, and brittle leaves. These are usually four from each tuft of the other leaves; and they have ever a common vagina, which is membranaceous and very thin. This is the style of the plant, and the *pila marina* appears to be a cluster of the fibres of the leaves of this plant, which cover the whole stalk, divided into their constituent fibres; and by the motion of the waves first broken and worn into short shreds, and afterwards wound up together into a roundish or ovalish ball.

(1.) * PILASTER. *n. f.* [*pilaſtre*, *Fr. pilaſtro*, *tal.*] A square column sometimes insulated, but sterner set within a wall, and only shewing a fourth or a fifth part of its thickness. *Diſt.*—*Pilaſters* must not be too tall and slender. *Wotton.*—

Built like a temple, where *pilaſters* round
Were set. *Milton.*

—The curtain rises, and a new frontispiece is seen, joined to the great *pilaſters* on each side of the stage. *Dryden.*—

Clap four slices of *pilaſters* on't. *Pope.*

(1.) PILASTER. See ARCHITECTURE, *Index.*

PILATE, PONTIUS, was governor of Judea when our Lord was crucified. Of his family or country we know but little, though it is believed that he was of Rome, or at least of Italy. He was sent to govern Judea in the room of Gratus, A. D. 26 or 27, and governed this province for ten years, from the 12th or 13th year of Tiberius to the 22d or 23d. He is represented both by Philo and Josephus as a man of an impetuous and obstinate temper, as a judge who used to sell justice, and to pronounce any sentence that was desired, provided he was paid for it. They likewise speak of his rapines, murders, oppressions, and the torments that he inflicted upon the innocent, and the persons he put to death without any form of process. Philo, in particular, describes him as having exercised an excessive cruelty during his whole government, disturbed the repose of Judea, and given occasion to the troubles and revolt that followed. St Luke records his massacre of the Galileans in the temple. (xiii. 1, &c.) His fruitless endeavours to deliver our Saviour from the hands of his enemies; his wife's alarming dream and message to him; his repeated declarations of our Saviour's innocence; his vain

endeavour to gratify the malice of the Jews by whipping him; his equally fruitless attempt to get rid of pronouncing sentence by sending him to Herod; his declaration of his utter aversion to condemn the innocent by washing his hands; with the consequent imprecation of the Jews upon themselves and their posterity; his want of resolution to acquit him; his inscription upon the cross in different languages; with his reply to the Jews, when they challenged it; and his delivery of the body to Joseph and Nicodemus, are recorded by the Evangelists.—Justin Martyr, Tertullian, Eusebius, and after them several others both ancient and modern, assure us, that it was formerly the custom for Roman magistrates to prepare copies of all verbal processes and judicial acts which they passed in their several provinces, and to send them to the emperor. And Pilate, having accordingly sent word to Tiberius of what had passed relating to Jesus Christ, the emperor wrote an account of it to the senate, in a manner that gave reason to judge that he thought favourably of the religion of Jesus Christ, and showed that he should be willing they would decree divine honours to him. But fortunately the senate was not of the same opinion, and so the matter was dropped; otherwise modern infidels would have ascribed the subsequent rapid and universal success of Christianity to the imperial power and influence of Tiberius. It appears by what Justin says of these acts, that the miracles of Jesus Christ were mentioned there, and that the soldiers had divided his garments among them. Eusebius insinuates that they spoke of his resurrection and ascension. Tertullian and Justin refer to these acts with so much confidence as would make one believe they had them in their hands. However, neither Eusebius nor St Jerome, who were both inquisitive, understanding persons, nor any other author that wrote afterwards, seem to have seen them, at least not the true and original acts; for as to what we have now in great numbers, they are not authentic, being neither ancient nor uniform. There are also some pretended letters of Pilate to Tiberius, giving a history of our Saviour, but they are universally allowed to be spurious. Pilate having, by his excessive cruelties and rapine, disturbed the peace of Judea during the whole time of his government, was at length deposed by Vitellius, the proconsul of Syria, A. D. 36, and sent to Rome to give an account of his conduct to the emperor. Tiberius having died before Pilate arrived at Rome, his successor Caligula banished him to Vienne in Gaul, where he was reduced to such extremity that he killed himself. He was only procurator of Judea, though the evangelists call him governor, because he in effect acted as one, by taking upon him to judge in criminal matters. See *Calmet's Diſt.* *Echard's Eccl. Hiſt.* *Beauſobre's Annot.* With regard to Pilate's wife, the general tradition is, that she was named Claudia Procula or Procula; and as to her dream, some think that as she had intelligence of our Lord's apprehension, and knew by his character that he was a righteous person, her imagination, struck with these ideas, naturally produced the dream we read of; but others think that this dream was sent miraculously, for the clearer manifestation of our Lord's innocence.

PILATRE DU ROSIER, Francis, was born at Metz the 30th of March, 1736. He was first apprentice to an apothecary there, and afterwards went to Paris in quest of improvement. He applied himself to the study of natural history and of natural philosophy, and had already acquired some reputation, when the discovery of M. Montgolfier had just astonished the learned world. On the 15th Oct. 1783, he attempted an aerial voyage with the Marquis of Arlande. He performed several other excursions in this way with brilliant success, in the presence of the royal family of France, of the King of Sweden, and of Prince Henry of Prussia. He then resolved to pass into England by means of his aerial vehicle, and for that purpose he repaired to Boulogne, whence he rose about 7 o'clock in the morning of the 15th June, 1785; but in half an hour after he set out, the balloon took fire, and the aeronaut, with his companion M. Romaine, were crushed to death by the fall of that machine, which was more ingenious, perhaps, than useful. (See *AEROSTATION*, *Index*.) Pilatre's social virtues and courage, which were very distinguished, heightened the regret of his friends for his loss. His merit as a chemist, and his experiments as an aeronaut, procured him some pecuniary rewards, and some public appointments. He had a pension from the King, was intendant of Monsieur's cabinets of natural philosophy, chemistry, and natural history, professor of natural philosophy, a member of several academies, and principal director of Monsieur's museum.

PILCHARD, or } *n. f.* in ichthyology, a fish
{
(1.) **PILCHER**, } which has a general likeness to the herring, but differs in some particulars very essentially. The body is less compressed than that of the herring, being thicker and rounder; the nose is shorter in proportion, and turns up; the under jaw is shorter. The back is more elevated; the belly less sharp. The dorsal fin of the pilchard is placed exactly in the centre of gravity, so that when taken up by it, the body preserves an equilibrium, whereas that of the herring dips at the head. The scales of the pilchard adhere very closely, whereas those of the herring very easily drop off. The pilchard is in general less than the herring, but is fatter, or more full of oil. Pilchards appear in vast shoals off the Cornish coasts about the middle of July, disappearing the beginning of winter, yet sometimes a few return after Christmas. Their winter retreat is the same with that of the herring, and their motives for migrating the same. See *CLUPEA*. They affect, during summer, a warmer latitude; for they are not found in any quantities on any of our coasts, except those of Cornwall, that is to say, from Fowey harbour to the Scilly isles, between which places the shoals keep shifting for some weeks. The approach of pilchards is known by the same signs as those that indicate the arrival of the herrings. Persons, called in Cornwall *huers*, are placed on the cliffs, to point to the boats stationed off the land the course of the fish. By the 1st of James I. c. 23, fishermen are empowered to go on the grounds of others to hue, without being liable to actions of trespass, which before occasioned frequent law-suits. Dr W. Borlase, in his *Account of the Pilchard Fishery*, says, "It employs a great

number of men on the sea; and men, women, and children, at land, in salting, pressing, washing, and cleaning, in making boats, nets, ropes, casks, and all the trades depending on their construction and sale. The usual number of hogheads of fish exported each year, for ten years, from 1747 to 1756 inclusive, from the four ports of Fowey, Falmouth, Penzance, and St Ives, in all amounted to 29,794; Fowey has exported yearly 1732 hogheads; Falmouth, 14,631½ hogheads; Penzance and Mounts-Bay, 12,149½ hogheads; St Ives, 1282 hogheads. Every hoghead for ten years last past, together with the bounty allowed for each when exported, and the oil made out of each, has amounted, one year with another at an average, to the price of L.1; 13; 3; so that the cash paid for pilchards exported has, at a medium, annually amounted to the sum of L.49,532, 10s." The numbers that are taken at one shooting out of the nets, is amazingly great. Mr Pennant says, that Dr Borlase assured him, that on the 5th of October 1767, there were at one time inclosed in St Ives's Bay 7000 hogheads, each hoghead containing 35,000 fish, in all 245,000,000.

(2.) * **PILCHER**. *n. f.* [Warburton says we should read *pilche*, which signifies a cloak or coat of skins, meaning the scabbard: this is confirmed by *Junius*, who renders *pilly*, a garment of skins; *pellice*, *Sax. pellice*, *Fr. pelliccia*, *Ital. pillis*, *Lat.*] 1. A furred gown or cafe; any thing lined with fur. *Hammer*. Pluck your sword out of his *pilcher* by the ears. *Shak.*

2. A fish like a herring much caught in Cornwall.

(1.) * **PILE**. *n. f.* [*pile*, *Fr. pile*, *Dutch.*] 1. A strong piece of wood driven into the ground to make a firm foundation.—The bridge the Turks before broke, by plucking up of certain *piles*, and taking away of the planks. *Knolles*.—If the ground be hollow or weak, he strengthens it by driving in *piles*. *Moxon*.—The foundation of the church of Harlem is supported by wooden *piles*, as the houses in Amsterdam are. *Locke*. 2. A heap; an accumulation.—

Bury all which yet distinctly ranges

In heaps and *piles* of ruin. *Shak.*

What *piles* of wealth hath he accumulated

To his own portion! *Shak.*

—By the water passing through the stone to its perpendicular intervals, was brought thither all the metallic matter now lodged therein, as well as that which lies only in an undigested and confused *pile*. *Woodward*. 3. Any thing heaped together to be burned.—

I'll burn your logs the while; pray give me it,

I'll carry't to the *pile*. *Shak. Tempest.*

—Woe to the bloody city, I will even make the *pile* for fire great. *Ezekiel* xxiv. 9.—In Alexander's time, the Indian philosophers, when weary of living, lay down upon their funeral *pile* without any visible concern. *Collier*.—

The wife, and counsellor, or priest,

Prepare and light his funeral fire,

And cheerful on the *pile* expire. *Prior.*

4. An edifice; a building.—

Th' ascending *pile* stood fixed.

Not to look back so far, to whom this ill

Owes the first glory of so brave a *pile*. *Denham.*

The *pile* o'erlook'd the town.

Dryden.

Fancy

Fancy brings the vanish'd *piles* to view. *Pope*.

A *pile* shall from its adhesion rise,
Fit to invade or prop the skies. *Swift*.

5. A hair [*pilus*, Lat.] His left cheek is a cheek of two *piles* and a half, but his right cheek is worn bare. *Shak. Alf's Well*. 6. Hairy surface; nap.—Many other sorts of stones are regularly figured; the amianthus of parallel threads, as in the *pile* of velvet. *Greiv*. 7. [*Pilum*, Lat.] The head of an arrow.—

There flucke the Steele *pile*, making way
Quite through his skull. *Chapman*.

The *pile* was of a horse fly's tongue,
Whose sharpness nought reversed. *Drayton*.

8. [*Pila*, Fr; *pila*, Italian.] One side of a coin; the reverse of *cross*.—A man may more justifiably throw up *cross* and *pile* for his opinions, than take them up for *Locke*. 9. [In the plural, *piles*.] The hemorrhoids.—Solicit the humours towards that part, to procure the *piles*, which seldom miss to relieve the head. *Arbushnot*.

(2.) *Pila*, in heraldry, an ordinary in form of a wedge, contracting from the chief, and terminating in a point towards the bottom of the shield.

(3.) *Pila*, among the Greeks and Romans, was a pyramid built of wood, whereon were laid the bodies of the deceased to be burnt: It was partly in the form of an altar, and differed in height according to the quality of the person to be consumed. Probably it might originally be considered as an altar, on which the dead were consumed as a burnt-offering to the infernal deities. The trees made use of in the erection of a funeral pile were such as abounded in pitch or resin, as being most combustible; if they used any other wood, it was split that it might the more easily catch fire. Round the pile were placed cypress boughs to hinder the noisome smell. See FUNERAL.

(4.) *Pila*, in coinage, denotes a kind of punchon, which, in the old way of coining with the hammer, contained the arms or other figure and inscription to be struck on the coin. See COINAGE. Accordingly we still call the arms side of a piece of money the *pila*, and the head the *cross*; because in ancient coin, a cross usually took the place of the head in ours.

* To *Pile*. v. a. 1. To heap; to coacervate.

2. The fabric of his folly, whose foundation
Is *piled* upon his faith. *Shak. Wint. Tale*.

Pile ten hills on the Tarpeian rock. *Shak*.

Hills *piled* on hills, on mountains mountains lie,
To make their mad approaches to the sky. *Dryd*.

Men *piled* on men, with active leaps arise.

Addison.

—In all that heap of quotations which he has *piled* up, nothing is aimed at. *Atterbury*.—Those heaps of comments, which are *piled* to high upon authors, that it is difficult sometimes to clear the text from the rubbish. *Felton*. 2. To fill with something heaped.—Attabalipa had a great house *piled* upon the sides with great wedges of gold. *Abbot's Description of the World*.

* *PILEATED*. adj. [*pileus*, Lat.] Having the form of a cover or hat.—A *pileated* echinus taken up with different shells of several kinds. *Woodward on Fossils*.

* *PILE-ENGINE*. n. f. a very curious machine invented by Mr Vauloue for driving the piles of

Westminster-bridge; but of which we need not give any description; as a new machine for driving piles has been invented lately by Mr S. Bunce of London, which will drive a greater number of piles in a given time than any other; and can be constructed more simply to work by horses than Mr Vauloue's engine. *Fig. 1.* and *2.* plate CCLXXIV. represent a side and front section of the machine. The chief parts are A, *fig. 1.* which are two endless ropes, or chains connected by cross pieces of iron B (see *fig. 2.*) corresponding with two cross grooves cut diametrically opposite in the wheel C (*fig. 1.*), into which they are received; and by which means the rope or chain A is carried round. FHK is a side-view of a strong wooden frame, moveable on the axis H. D is a wheel, over which the chain passes and turns within at the top of the frame. It moves occasionally from F to G upon the centre H, and is kept in the position F by the weight I fixed to the end K. *Fig. 3.* L is the iron ram, which is connected with the cross pieces by the hook M. N is a cylindrical piece of wood suspended at the hook at O, which, by sliding freely upon the bar that connects the hook to the ram, always brings the hook upright upon the chain when at the bottom of the machine, in the position of GP. See *fig. 1.*—When the man at S turns the usual crane-work, the ram being connected to the chain, and passing between the guides, is drawn up in a perpendicular direction; and when it is near the top of the machine, the projecting bar Q of the hook strikes against a cross piece of wood at R (*fig. 1.*), and consequently discharges the ram, whilst the weight I of the moveable frame instantly draws the upper wheel into the position shown at F, and keeps the chain free of the ram in its descent. The hook, while descending, is prevented from catching the chain by the wooden piece N. For that piece being specifically lighter than the iron weight below, and moving with a less degree of velocity, cannot come in contact with the iron till it is at the bottom, and the ram stops. It then falls and again connects the hook with the chain, which draws up the ram, as before. Mr Bunce has made a model of this machine, which performs perfectly well; and he observes, that, as the motion of the wheel C is uninterrupted, there appears to be the least possible time lost in the operation.

* *PILER*. n. f. [from *pile*.] He who accumulates.

(1.) *PILES*. See MEDICINE, Index.

(2.) *PILES*, Roger DE, a learned French writer, born at Clamecy, of a good family, in 1635. He studied at Nevers and Auxerre; then went to Paris for philosophy, and studied divinity in the Sorbonne. Meantime, he cultivated painting under Recollet. In 1652 he became preceptor to the son of M. Amelot, whom he accompanied into Italy, and on his return became famous as a connoisseur. In 1682 M. Amelot being sent on an embassy to Venice, De Piles attended him as secretary; and, during his residence there, he was sent by the marquis of Louvois into Germany, to purchase pictures for Lewis XIV. and likewise to execute a private commission on state affairs. In 1685 he attended M. Amelot to Lisbon, and in 1689 to Switzerland, as secretary. In 1693 he

was

was sent *incognito* to Holland, as a virtuoso, but in reality to act as a spy. Being detected, he was put in prison, where he continued till the peace of Ryfwick, and where he wrote his *Lives of the Painters*. In 1705, though in his 70th year, he attended M. Amelot on his embassy into Madrid. He died in 1709. His other works are, 1. An Abridgement of Anatomy: 2. A Translation of Frenoy: 3. Dialogues on Painting: 4. A Dissertation on the works of famous painters: 5. Elements of Painting. All in French.

PILEUS, in Roman antiquity, was the ordinary cap or hat worn at public shows and sacrifices, and by the freedmen. It was one of the common rewards assigned to such gladiators as were slaves, in token of their obtaining freedom.

PILE WORMS, are a kind of worms found in the piles of the sea dikes in Holland. They are of very various sizes; for some of the young ones are not above an inch or two in length, while others have been found thirteen or fourteen inches long. The heads of these creatures are covered with two hard shells or hemispheres; which, together, form a figure resembling an augre, and with which they bore the wood. The best remedy against them is to perforate the pile with many small holes about an inch asunder, then it must be done over with a varnish in the hottest sun; and, while the varnish is hot, brick dust must be strewed over it; and this being several times repeated, the pile will be covered with a strong crust absolutely impenetrable to all insects.

(1.) * PILEWORT. *n. f.* [*chelidonium minus*, Lat.] A plant.

(2.) PILEWORT, the *RANUNCULUS FICARIA*, of Linnaeus, is a very small plant, found in moist meadows, and by hedge sides. The roots consist of slender fibres with some little tubercles among them, which are supposed to resemble the hemorrhoids. Thence it has been concluded, that this root must needs be of wonderful efficacy for the cure of that distemper; to the taste, it is little other than mucilaginous; and although still retained in several of the foreign pharmacopoeias, it is hardly used in this country.

(1.) * To PILFER. *v. a.* [*piller*, Fr.] To steal; to gain by petty robbery.—They *pilfer* away all things that they can from such strangers as do land. *Abbot*.—He would not *pilfer* the victory. *Bacon*.—

Triumphant leaders, at an army's head,
Hemm'd round with glories, *pilfer* cloth or bread. *Pope*.

(2.) * To PILFER. *v. n.* To practise petty theft.—

Such as basest and the meanest wretches,
For *pilferings* and most common trespasses,
Are punished with. *Shak.*

A wall sufficient to defend
Our island from the *pilfering* borderers. *Shak.*

I came not here on such a trivial toy
As a strayed ewe, or to pursue the stealth
Of *pilfering* wolf. *Milton*.

—When these plagiarists come to be stript of their
pilfered ornaments, there's the daw of the fable.
L'Estrange.—

Every string is told,

For fear some *pilfering* hand should make too bold. *Dryden*.

* PILFERER. *n. f.* [from *pilfer*.] One who steals petty things.—Hast thou suffered at any time by vagabonds and *pilferers*? *Atterbury*.
Thieves of renown, and *pilferers* of fame. *Young*.

* PILFERINGLY. *adv.* With petty larceny; filchingly.

* PILFERY. *n. f.* [from *pilfer*.] Petty theft.—A wolf charges a fox with a piece of *pilfery*. *L'Estrange*.

(1.) * PILGRIM. *n. f.* [*pilgrim*, Dutch; *pelerin*, Fr. *pelegrino*, Italian; *peregrinus*, Lat.] A traveller; a wanderer; particularly one who travels on a religious account.—Two *pilgrims*, which have wandered some miles together, have a heart's-grief when they are near to part. *Drummond*.—They could not tell Abraham's footstep from an ordinary *pilgrim's*. *Stillingfleet*.—

Like *pilgrims* to th' appointed place we tend. *Dryden*.

(2.) PILGRIMS travel through foreign countries to visit holy places, and to pay devotion to the relics of dead saints. See PILGRIMAGE.

* To PILGRIM. *v. n.* [from the noun.] To wander; to ramble. Not used.—The ambulo hath no certain home or diet, but *pilgrims* up and down every where. *Grew*.

(1.) * PILGRIMAGE. *n. f.* [*pelerinage*, Fr.] 1. A long journey; travel; more usually a journey on account of devotion.—

A long and weary *pilgrimage*. *Shak.*

In lasting labour of his *pilgrimage*. *Shak.*

—Painting is a long *pilgrimage*. *Dryden*. 2. *Shakespeare* uses it for time irksomely spent.—

In prison thou hast spent a *pilgrimage*. *Shak.*

(2.) PILGRIMAGE is a kind of religious discipline, which consists in taking a journey to some holy place, in order to adore the relics of some deceased saint. Pilgrimages began to be made about the middle ages of the church; but they were most in vogue after the end of the 12th century, when every one was for visiting places of devotion, not excepting kings and princes themselves; and even bishops made no difficulty of being absent from their churches on the same account. The places most visited were Jerusalem, Rome, Compostella, and Tours. In 1228, in the reign of Henry VI. many licences were granted to captains of English ships, for carrying devout persons to the shrine of St James of Compostella, in Spain; provided that those pilgrims should first swear not to take any thing prejudicial to England, nor to reveal any of its secrets, nor to carry out with them any more gold or silver than what would be sufficient for their reasonable expences. In this year there went out thither the following number of persons: From London 280; Bristol 200, Weymouth 122, Dartmouth 90, Yarmouth 60, Jersey 60, Plymouth 40, Exeter 30, Liverpool 24, Ipswich 20; in all 926 pilgrims. The greatest numbers now resort to Loretto, to visit the chamber of the blessed virgin, in which she was born, and brought up her son Jesus till he was 22 years of age. For the pilgrimages of the

the followers of Mahomet, see **MANOMETANISM**, § II. In every country where popery was established, pilgrimages were common; and in those countries which are still popish, they continue. In England, the shrine of St Thomas à Becket was the chief resort of the pious; and in Scotland St Andrew's; where, as tradition informs us, was deposited a leg of the holy apostle. In Ireland they still continue; for, from the beginning of May till the middle of August every year, crowds of popish penitents, from all parts of that country, resort to an island near the centre of *Lough-fee*, or *White Lake*, in the county of Donnegal, to the amount of 3000 or 4000. These are mostly of the poorer sort, and many of them are proxies for those who are richer; some of whom, however, with some of the priests and bishops on occasion, make their appearance there. When the pilgrim comes within sight of the holy lake, he must uncover his hands and feet, and thus walk to the water side, and is taken to the island for sixpence. Here there are two chapels and 15 other houses; to which are added confessionals, so contrived, that the priest cannot see the person confessing. The penance varies according to the circumstances of the penitent; during the continuance of which (which is sometimes three, six, or nine days) he subsists on oat-meal, sometimes made into bread. He traverses sharp stones on his bare knees or feet, and goes through a variety of other forms, paying sixpence at every different confession. When all is over, the priest bores a gimblet hole through the pilgrim's staff near the top, in which he fastens a cross peg; gives him as many holy pebbles out of the lake as he cares to carry away, for amulets to be presented to his friends, and so dismisses him, an object of veneration to all other papists not thus initiated; who no sooner see the pilgrim's cross in his hands, than they kneel down to get his blessing. There are, however, other parts of Ireland sacred to extraordinary worship and pilgrimage; and the number of holy wells, and miraculous cures, &c. produced by them, is very great.

PILKINGTON, Letitia, a famous poetical genius, daughter of Dr Van Lewin, a physician of Dublin, where she was born in 1712. She was married very young to the Reverend Matthew Pilkington, a poet also of no inconsiderable merit; and these two wits, as is often the case, lived very unhappily together. They were at length totally separated, on the husband accidentally discovering a gentleman in her bedchamber at two o'clock in the morning; a circumstance which she accounted for in a very unsatisfactory manner. After this unlucky adventure, Mrs Pilkington came to London, and having recourse to her pen for subsistence, through the means of Colley Cibber, she lived some time on the contributions of the great. She was, however, thrown into the Marshalsea for debt; and being set at liberty, opened a pamphlet shop. She raised at length a handsome subscription for her Memoirs; which are written with great sprightliness and wit, containing several entertaining anecdotes of dean Swift, with whom she was intimate, as well as many pretty little pieces of her poetry. This ingenious, but

unhappy woman, is said at last to have killed herself with drinking, at Dublin, in 1750.

PILKOPEN, a town of Prussia, in Smaland, on a mountain; 30 miles north of Konigsberg.

(1.) * **PILL**. *n. f.* [*pilula*, Lat. *pillule*, French.] 1. Medicine made into a small ball or mass.—In the taking of a potion or *pills*, the head and the neck shake. *Bacon*.—

When I was sick, you gave me bitter *pills*.

Shak.

Certain hard words made into *pills*. *Cragshaw*.

2. Any thing nauseous.—

Call it diversion, and the *pill* goes down.

Young.

(2.) A **PILL**, in pharmacy, is a form of medicine resembling a little ball, to be swallowed whole; invented for such as cannot take bitter and ill tasted medicinal draughts; also to keep in readiness for occasional use without decaying. See **PHARMACY**, *Index*.

(3.) **PILL**, in geography, a town of Somersetshire, at the mouth of the Avon, four miles below Bristol; exhibiting the most beautiful and romantic views.

(1.) * **To PILL**. *v. a.* [*piller*, Fr.] 1. To rob; to plunder.—

So did he all the kingdom rob and *pill*.

Spenser.

The commons hath he *pilled* with grievous taxes.

Shak.

Large handed robbers your grave masters are,

And *pill* by law.

Shak.

—Suppose *pilling* and polling officers, as busy upon the people as those flies were upon the fox.

L'Estrange.—

He who *pilled* his province 'scapes the laws.

Dryden.

2. For *peel*; to strip off the bark.—Jacob took him rods of green poplar and *pilled* white streaks in them. *Genesis*, xxx. 37.

(2.) * **To PILL**. *v. n.* To be stript away; to come off in flakes or scoriz. This should be *peel*; which see.—The whiteness *pilled* away from his eyes. *Job*, xi. 13.

(1.) * **PILLAGE**. *n. f.* [*pillage*, Fr.] 1. Plunder; something got by plundering or pillaging.—

Which *pillage* they with merry march bring home.

Shak.

2. The act of plundering.—

Thy sons make *pillage* of her chastity. *Shak.*

(2.) **PILLAGE BAY**, a bay on the south coast of Labrador. Lon. 62. 58. W. Lat. 50. 17. N.

* **To PILLAGE**. *v. a.* [from the noun.] To plunder; to spoil.—The consul Mummius, after having beaten their army, took, *pillaged*, and burnt their city. *Arbuthnot*.

* **PILLAGER**. *n. f.* [from *pillage*.] A plunderer; a spoiler.—

Joze's seed, the *pillager*,

Stood close before.

Chapman.

(1.) * **PILLAR**. *n. f.* [*pilier*, Fr. *pilar*, Spanish; *pilastra*, Italian; *pilar*, Welsh and Armoric.] 1. A column.—*Pillars* or columns, I could distinguish into simple and compounded. *Wotton*.—

The palace built by Pious; vast and proud,
Supported by a hundred *pillars* stood. *Dryden*.

2. A

1. A supporter; a maintainer.—
Call them *pillars* that will stand to us. *Shak.*
The triple *pillar* of the world transform'd.
Into a trumpet's stool. *Shak.*

I charge you by the law,
Whereof you are a well deserving *pillar*,
Proceed to judgment. *Shak.*

(2.) *PILLAR*, (§ 1. Def. 1.) See ARCHITECTURE, § 102, 109—117.

(3.) *PILLAR*, in the manege, is the centre of the ring, or manege ground, round which a horse turns, whether there be a pillar in it or not. Besides this, there are pillars on the circumference or sides of the manege ground, placed at certain distances, by two and two, from whence they are called the *two pillars*, to distinguish them from that of the centre. The use of the pillar in the centre is for regulating the extent of ground, that the manege upon the volta may be performed with method and justness, and that they may work in a square; by rule and measure, upon the four lines of the volta; and also to break unruly high mettled horses, without endangering the rider. The two pillars are placed at the distance of two or three paces one from the other; and the horse is put between those, to teach him to rise before, and yerk out behind, and put himself upon raised airs, &c. either by the aids or chastisements.

(4.) *PILLAR CAPE*, a Cape at the W. end of the Straits of Magellan, 18 miles N. of Cape Desada.

(5.) *PILLAR*, POMPEY'S. See ALEXANDRIA.

(6.) *PILLARS*, in antiquarian topography, are large single stones set up perpendicularly. Those of them which are found in this country have been the work of the Druids; but as they are the most simple of all monuments, they are unquestionably more ancient than druidism itself. They were placed as memorials recording different events; such as remarkable instances of God's mercies, contracts, singular victories, boundaries, and sometimes sepulchres. Various instances of these monuments erected by the patriarchs occur in the Old Testament; such was that raised by Jacob at Lug, afterwards by him named *Bethel*; such also was the pillar placed by him over the grave of Rachel. They were likewise marks of execrations and magical talismans. These stones, from having been long considered as objects of veneration, at length were by the ignorant and superstitious idolatrous worshippers; wherefore, after the introduction of Christianity, some had crosses cut on them, which was considered as snatching them from the service of the devil. Vulgar superstition of a later date has led the common people to consider them as persons transformed into stone for the punishment of some crime, generally that of sabbath-breaking; but this tale is not confined to single stones, but is told also of whole circles; witness the monuments called the *hurlers* in Cornwall, and *Rollorick stones* in Warwickshire. The first are by the vulgar supposed to have been once men, and thus transformed as a punishment for playing on the Lord's day at a game called *hurling*; the latter, a pagan king and his army.

(7.) *PILLAR SAINTS*. See HISTORY, Part II. See VI.

* *PILLARED*, *adj.* [from *pillar*.] 1. Supported by columns.—

A *pillar'd* shade
High overarch'd. *Milton.*

If this fall, *Milton.*

The *pillar'd* firmament is rottenness. *Milton.*

2. Having the form of a column.—
Th' insatiate hill shoots forth the *pillar'd* flame. *Thomson.*

* *PILLED GARLICK*, *n. f.* 1. One whose hair has fallen off by a disease. 2. A sneaking or heart-fellow.

PILLING MOSS, a moss in Lancashire, between Garfing and the sea coast. In 1745, a considerable part of this moss, after rising to a great height, sunk as much below the level; then moved slowly towards the S. side, and in half an hour covered 20 acres of ground. A family was driven out of their dwelling-house, which was quickly after overthrown. About 1000 acres of improved land adjacent to the moss were overflowed with water and moss.

* *PILLION*, *n. f.* [from *pillon*.] 1. A soft saddle set behind a horseman for a woman to sit on.—

The horse and *pillion* both were gone;

Phyllis, it seems, was fled with John. *Swift.*

2. A pad; a pannel; a low saddle.—I thought that the manner had been Irish, as also the furniture of his horse, his shank *pillion* without stirrups. *Spenser.* 3. The pad of the saddle that touches the horse.

(1.) * *PILLORY*, *n. f.* [*pillori*, Fr. *pillorium*, low Latin.] A frame erected on a pillar, and made with holes and moveable boards, through which the heads and hands of criminals are put.—I have stood on the *pillory* for the geese he hath killed. *Shak.*

As thick as eggs at Ward in *pillory*. *Pope.*

—The jeer of a theatre, the *pillory* and the whipping-post, are very near a kin. *Watts.*

An opera, like a *pillory*, may be said

To nail our ears down, but expose our head.

Towser.
(2.) *PILLORY*, (*colistrigium*, *q. d.* *collum strigens*; *pilloria*. From the French, *pileur*, i. e. *deprecator*, or *pelori*; derived from the Greek *pelos*, *janus*, a door, because one standing on a pillory puts his head as it were through the door, and *pelos*, to see,) is an engine made of wood to punish offenders, by exposing them to public view, and rendering them infamous.—There is a *statute of the pillory*, 51 Hen. III. And by statute it is appointed for bakers, forestallers, and those who use false weights, perjury, forgery, &c. 3 *Inft.* 219. Lords of leets are to have a pillory and timber, or it will be the cause of forfeiture of the leet; and a village may be bound by prescription to provide a pillory, &c. 2 *Hawk.* P. C. 73.

* To *PILLORY*, *v. a.* [*pillorier*, Fr. from the noun.] To punish with the pillory.—To be burnt in the hand, or *pilloried*, is a more lasting reproach than to be scourged or confin'd. *Gov. of the Tongue.*

* *PILLOW*, *n. f.* [*pyle*, Saxon; *pilewe*, Dutch.] A bag

A bag of down or feathers laid under the head to sleep on.—

Pluck stout men's pillows from below their heads. *Shak.*

One turf shall serve as pillow for us both. *Shak.*

—A stranger than needs buy a pillow there, saying, this pillow sure is good to sleep on, since he could sleep on it that owed so many debts. *Bacon.*

Thy melted maid,

Corrupted by thy lover's gold,

His letter at thy pillow laid. *Donne.*

—Their feathers serve to stuff our beds and pillows. *Ray.*

* TO PILLOW. *v. a.* To rest any thing on a pillow.—

The sun in bed,

Curtain'd with cloudy red,

Pillows his chin upon an orient wave. *Milton.*

* PILLOWBEER. } *n. s.* The cover of a pillow.

* PILLOWCASE. } —When you put a clean pillowcase on your lady's pillow, fasten it well with pins. *Swift.*

PILLTOWN, a town of Ireland, in Waterford, Munster.

PILNITZ, a town of Upper Saxony, in the margraviate of Meissen, with a castle, belonging to the elector of Saxony; memorable for the treaty entered into between the emperor of Germany, the king of Prussia, and other princes of Europe, against France, in 1791. It lies 4 miles NW. of Perna, and 7 SE. of Dresden.

PILON, Frederick, an Irish dramatic writer, born at Cork, in 1750. He was sent to Edinburgh to study medicine, but the stage soon withdrew his attention from physic. He made his first appearance on the Edinburgh theatre in the character of *Oroonoko*. But though his conception was good, and his discrimination beyond common acting, yet he laboured under natural and insuperable defects; his figure wanted grace, and his voice wanted harmony. His friends, however, being offended, he continued to act on the provincial theatres for four years, till 1776, when he went to London; where he published a *Critical Essay on Hamlet*, which procured him the patronage of Mr Coleman. In 1776, he wrote *the Drama*, a poem, in the manner of Churchill's *Rasheed*; and *Regatta*, a poem on the Fete given on the Thames in 1776, both of which were well received. After various other miscellaneous pieces, he published, in 1778, *The Invasion, or a Trip to Brighthelmston*, a comedy, which was acted with applause at Covent Garden. After this, he wrote various pieces for the managers, but although they had drawn considerable houses, his *Fair American*, an opera, was refused by the manager of Covent Garden; and though acted at Drury Lane, produced a dispute with the manager, and much more trouble than profit to the author. His next comedy was, *He would be a Soldier*, the profits of which to him were much inferior to what might have been expected, from its very great run. After this, being distressed by creditors, he went to France, where he wrote a comedy called *The Ward of Chancery*, but had not finished

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it completely, when he returned to England, and died at Lambeth, in Jan. 1788.

* PILOSTITY, *n. s.* [from *pilosus*, Lat.] Hairiness.—At the years of puberty, all effects of heat do then come on, as *pilosity*, more roughness in the skin. *Bacon.*

(1.) * PILOT, *n. s.* [*pilote*, Fr. *piloot*, Dutch.] He whose office is to steer the ship.—

When her keel ploughs hell,

And deck knocks heaven, then to manage her,
Becomes the name and office of a pilot. *Ben Jonson.*

To that port ourselves we must not force,
Before our pilot, Nature, steers our course. *Denham.*

What port can such a pilot find,
Who in the night of fate must blindly steer? *Dryden.*

—The Roman fleet, although conducted by pilots without experience, defeated that of the Carthaginians. *Arbutnot.*

(2.) The PILOT is the officer who superintends the navigation, either upon the sea coast or on the main ocean. It is, however, more particularly applied by our mariners to the person charged with the direction of a ship's course on or near the sea coast, and into the roads, bays, rivers, havens, &c. within his respective district. Pilots of ships, taking upon them to conduct any ship from Dover, &c. to any place up the Thames, are to be first examined and approved by the master and wardens of the society of Trinity House, &c. or shall forfeit 10l. for the first offence, 20l. for the second, and 40l. for every other offence; one moiety to the informer, the other to the master and wardens; but any master or mate of a ship may pilot his own vessel up the river; and if any ship be lost through the negligence of any pilot, he shall be for ever after disabled to act as a pilot. 3 Geo. I. c. 13. The lord warden of the cinque ports may make rules for the government of pilots, and order a sufficient number to ply at sea to conduct ships up to the Thames: 7 Geo. I. c. 21. No person shall act as a pilot on the Thames, &c. (except in collier ships) without a licence from the master and wardens of Trinity House at Deptford, on pain of forfeiting 10l. And pilots are to be subject to the government of that corporation; and pay ancient dues, not exceeding 2s. in the pound, out of wages, for the use of the poor thereof. Stat. 5. Geo. II. c. 20. By the ci-devant laws of France, no person could be received as pilot till he had made several voyages, and passed a strict examination; and after that, on his return in long voyages, he was obliged to lodge a copy of his journal in the admiralty; and if a pilot occasioned the loss of a ship, he had to pay 100 livres fine, and to be for ever deprived of the exercise of pilotage; and if he did it designedly, be punished with death, *Lex Mercat.* 70, 71. The laws of OLERON ordain, That if any pilot designedly misguide a ship, that it may be cast away, he shall be put to a rigorous death, and hung in chains; and if the lord of a place, where a ship be thus lost, abet such villains, to have a share of the wreck, he shall be apprehended, and all his goods forfeited

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for the satisfaction of the persons suffering; and his person shall be fastened to a stake in the midst of his own mansion, which, being fired on the four corners, shall be burned to the ground, and he with it. *Lex Ol. c. 25.* And if the fault of a pilot be so notorious, that the ship's crew see an apparent wreck, they may lead him to the hatch- es, and strike off his head; but the common law denies this hasty execution: an ignorant pilot is sentenced to pass thrice under the ship's keel by the laws of Denmark. *Lex Mercat. 70.* The regulations with regard to pilots in the royal navy are as follow: "The purser of the ship is always to have a set of bedding provided on board for the pilots; and the captain is to order the boat- swain to supply them with hammocks, and a convenient place to lie in, near their duty, and apart from the common men; which bedding and ham- mocks are to be returned when the pilots leave the ship. A pilot, when conducting one of his Majesty's ships in pilot water, shall have the sole charge and command of the ship, and may give orders for steering, setting, trimming, or furling the sails; tacking the ship; or whatever concerns the navigation; and the captain is to take care that all the officers and crew obey his orders. But the captain is diligently to observe the con- duct of the pilot; and if he judges him to behave so ill as to bring the ship into danger, he may re- move him from the command and charge of the ship, and take such methods for her preservation as shall be judged necessary; remarking upon the log-book, the exact hour and time when the pilot was removed from his office, and aligning the rea- sons for it. Captains of the king's ships employing pilots, whether British or foreigners, are ordered to be punctual in their certificates, vouchers, and payments, as soon as the service is over." See *Regulations and Instructions of the Sea-Service, &c.*

* *TO PILOT. v. a.* [from the noun.] To steer; to direct in the course.

* *PILOTAGE. n. f.* [*pilotage*, French, from *pilot*. 1. Pilot's skill; knowledge of coasts.— We must for ever abandon the Indies, and lose all our knowledge and *pilotage* of that part of the world. *Raleigh.* 2. A pilot's hire. *Ainsworth.*

PILOT FISH, or *Gasterosteus Duxor*, in ichthyology, is a species of the gasterosteus, and is found in the Mediterranean and in the Atlantic ocean, chiefly towards the equator. See *Plate CCLXXIV.* and *GASTEROSTEUS.*) Catesby, who gives a figure of it in its natural size, together with a short description, calls it *perca marina fœderia*, or ruder fish. One of them, which Gronovius describes, was about 4 inches long, and its greatest breadth little more than an inch; the head is about a third of the body, and covered, excepting the space between the snout and the eye, with scales scarcely perceptible, and covering one another like tiles; the iris of the eye is a silver grey; the jaws are of equal size, and furnished as well as the palate with small teeth disposed in groups; there is also a longitudinal row of teeth on the tongue. The trunk of the pilot fish is oblong, a little rounded; but it appears quadrangular to- wards the tail, because at this place the lines are thicker, and form a kind of membranaceous pro- jection. The back fin is long, and furnished with

seven radii; on the fore part of this fin are three moveable prickles very short; the fins on the breast have each of them 20 radii, forked at their extremity; the abdominal fins have six; that of the anus has 17 branches, of which the first is longest; this fin is preceded by a small moveable prickle; that of the tail is thick, large, and forked. The pilot fish is of a brownish colour, chang- ing into gold; a transverse black belt crosses the head; the 2d passes over the body at the place of the breast; a 3d near the moveable prickles of the back; 3 others near the region of the anus; and a 7th at the tail. Seafaring people observe, that this fish frequently accompanies their vessels; and as they see it generally towards the fore part of the ship, they imagined that it was guiding and tracing out the course of the vessel, and hence it received the name of *pilot fish*. Obee tells us, that they are shaped like those mackerels which have a transverse line across the body. "Sailors (con- tinues he) give them the name of *pilots*, because they closely follow the dog-fish, swimming in great shoals round it on all sides. It is thought that they point out some prey to the dog-fish. (See *Mem. of the Swed. Acad. for 1753*, vol. xvi. p. 71.) It like- wise follows the shark, apparently for the remains of its prey. Barbut informs us, that these fishes propagate their species like the shark. He adds, that in the gulph of Guinea they follow ships for the sake of the offals, and hence the Dutch give them the name of *dung-fish*. Though so small, they can keep pace with ships in their swiftest course.

PILPAY, a celebrated Bramin, who flourished about A. A. C. 250. He wrote a book of fables, which has been translated into most of the lan- guages of Europe.

PILSEN, a circle or province of Bohemia, a- bounding in sheep, and famous for excellent cheese, with a town of the same name.

* *PILSER. n. f.* The mouth or fly that runs into a flame. *Ains.*

(1.) *PILTEN*, a division of Courland, which lies in Courland Proper, and derives its name from the ancient castle or palace of Piltén, built by Valdemar II. king of Denmark, about 1230, when he founded a bishop's see in this country for the conversion of its Pagan inhabitants. This district afterwards successively belonged to the Germans, the king of Denmark, the duke of Courland, and to Poland; and by virtue of the instrument of regency drawn up for it in 1717, the government was lodged in 7 Polish senators or counsellors, from whom an appeal lies to the king. The bishop of Samogitia also styles him- self bishop of Piltén. The most remarkable part of this district is the promontory of Domefnis, which projects northward into the gulf of Livonia. From this cape a sand bank runs 4 German miles farther into the sea, half of which lies under water, and cannot be discerned. To the east of this promontory is an unsathomable abyss, which is never observed to be agitated. For the safety of vessels bound to Livonia, two square beacons have been erected on the coast, near Domefnis church, opposite to the sand bank, and facing each other. One of these is 12 fathoms high, and the other 8; and a large fire is kept burning on them.

them from the first of August to the first of January. When the mariners see these fires appear as one in a direct line, they may conclude that they are clear of the extremity of the sand bank, and consequently out of danger; but if they see both beacons, they are in danger of running upon it. The district of Piltan contains 7 parishes, and several villages. The inhabitants are chiefly Lutherans.

(2.) **PILTEN**, or **PYLTYN**, the capital of the above district, seated on the Windaw, between Golding and Fort Windaw. Lon. 22. 10. E. Lat. 57. 15. N.

PILULÆ, pills. See **PHARMACY**, *Index*.

PILULARIA, in botany, **PEPPER GRASS**, a genus of plants in the class Cryptogamia, and order of Filices; ranking in the natural method in the 45th order *Filices*.

PILUM, a missile weapon used by the Roman soldiers, and in a charge darted upon the enemy. Its point, we are told by Polybius, was so long and small, that after the first discharge it was generally so bent as to be rendered useless. The legionary soldiers made use of the pilum, and each man carried two. The pilum underwent many alterations and improvements, inasmuch that it is impossible with any precision to describe it. Julius Scaliger laboured much to give an accurate account of it. It appears to have been sometimes round, but most commonly square, to have been two cubits long in the staff, and to have had an iron point of the same length hooked and jagged at the end. Marius made a material improvement in it; for during the Cimbrian war, he so contrived it, that when it stuck in the enemies' shield, it should bend down in an angle in the part where the wood was connected with the iron, and thus become useless to the person who received it.

PILUMNUS, in Roman mythology, the god of the bakers. See **PICUMNUS**. Turnus boasted of being descended from him. *Virg. Æn. ix. 4.*

PIMBLE MEER, a large lake of N. Wales, in Merionethshire, S. of Bala.

(1.) * **PIMENTA**. *n. f.* [*piment*, French.] A kind of spice.—*Pimenta*, from its round figure, and the place whence it is brought, has been called Jamaica pepper, and from its mixt flavour of the several aromatics, it has obtained the name of all-spice: it is a fruit gathered before it is ripe, and resembles cloves more than any other spice. *Hill's Mat. Med.*

(2.) **PIMENTA**, or **OR**, as Mr Edward writes, **PIMENTO**, } **PIEMENTO**, in botany, or **JAMAICA PEPPER**, or *Allspice*, a species of the myrtus. See **MYRTUS**, N° II. § 2. "The pimento trees grow spontaneously, and in great abundance, in many parts of Jamaica, but more particularly on hilly situations near the sea, on the N. side of that island; where they fill the air with fragrance, and form the most delicious groves that can possibly be imagined. This tree is purely a child of nature, and seems to mock all the labours of man in his endeavours to extend or improve its growth; not one attempt in so to propagate the young plants, or to raise them from the seeds, in parts of the country where it is not found growing spontaneously, having succeeded. The usual method of forming a new pimento plantation (in Jamaica it is called a *walk*) is to

appropriate a piece of woodland, in the neighbourhood of a plantation already existing, or in a country where the scattered trees are found in a native state, the woods of which being fallen, the trees are suffered to remain on the ground till they become rotten and perish. Within a year after the first season, abundance of young pimento plants will be found growing vigorously in all parts of the land, being without doubt produced from ripe berries scattered there by the birds, while the fallen trees, &c. afford them both shelter and shade. At the end of two years it will be proper to give the land a thorough cleaning, leaving such only of the pimento trees as have a good appearance, which will then soon form such groves as those I have described, and, except perhaps for the first 4 or 5 years, require very little attention afterwards. Soon after the trees are in blossom, the berries become fit for gathering; the fruit not being suffered to ripen on the tree, as the pulp in that state, being moist and glutinous, is difficult to cure, and when dry becomes black and tasteless. It is impossible, however, to prevent some of the ripe berries from mixing with the rest; but if the proportion of them be great, the price of the commodity is considerably injured. It is gathered by the hand; one labourer on the tree, employed in gathering the small branches, will give employment to three below (who are generally women and children) in picking the berries; and an industrious picker will fill a bag of 70 lbs. in the day. The returns from a pimento walk in a favourable season are prodigious. A single tree has been known to yield 150 lbs. of the raw fruit, or one cwt. of the dried spice; there being commonly a loss in weight of one 3d in curing; but this, like many other of the minor productions, is exceedingly uncertain, and perhaps a very plentiful crop occurs but once in five years."

PIMERIA, a district of N. America, the most northern province of New Navarre.

* **PIMP**. *n. f.* [*pinge*, Fr. *Skimmer*.] One who provides gratifications for the lust of others; a procurer; a pander.—

I'm courted by all

As principal *pimp* to the mighty king Harry.

Addison.

Lords keep a *pimp* to bring a wench. *Swift.*
* To **PIMP**. *v. a.* [from the noun.] To provide gratifications for the lust of others; to pander; to procure.—

But he's possess'd with a thousand imps,
To work whose ends his madness *pimps*. *Swift.*

(1.) * **PIMPERNEL**. *n. f.* [*pimpernella*, Lat. *pimpernelle*, French.] A plant. *Miller.*

(2.) **PIMPERNEL**. See **ANAGALLIS**.

(3.) **PIMPERNEL**, ROUND-LEAVED. See **SAMOLUS**.

(4.) **PIMPERNEL**, WATER. See **VERONICA**.

(5.) **PIMPERNEL**, YELLOW. See **LYSIMACHIA**.

PIMPILLO, a species of **CACTUS**.

PIMPINELLA, **BURNET SAXIFRAGE**; a genus of the digynia order, belonging to the pentandria class of plants; and in the natural method ranking under the 45th order, *Umbellata*. There are 7 species: the most remarkable are,

1. **PIMPINELLA ANISUM**, the common anise,

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is an annual plant, which grows naturally in Egypt, but is cultivated in Malta and Spain; from whence the seeds are annually imported into Britain. The lower leaves of this plant are divided into three lobes, which are deeply cut on their edges; the stalk rises a foot and a half high, dividing into several slender branches, garnished with narrow leaves, cut into three or four narrow segments, terminated by pretty large loose umbels, composed of smaller umbels or rays, which stand on pretty long footstalks. The flowers are small, and of a yellowish white; the seeds are oblong and swelling.—The former species requires no culture; the latter is too tender to be cultivated for profit in this country. However, the seeds will come up if sown in the beginning of April upon a warm border. When they come up, they should be thinned and kept clear of weeds, which is all the culture they require.

2. PIMPINELLA MAJOR, or greater burnet saxifrage, growing naturally in chalky woods, and on the sides of the banks near hedges, in several parts of England. The lower leaves of this sort are winged; the lobes are deeply sawed on their edges, and sit close to the midrib, of a dark green. The stalks are more than a foot high, dividing into four or five branches. The lower part of the stalk is garnished with winged leaves, shaped like those at the bottom, but smaller; those upon the branches are short and trifid; the branches are terminated by small umbels of white flowers, which are composed of smaller umbels or rays. The flowers have five heart-shaped petals, which turn inward, and are succeeded by two narrow, oblong, channelled seeds. Both these species are used in medicine. The roots of pimpinella have a grateful, warm, very pungent taste, which is entirely extracted by rectified spirit; in distillation the menstruum arises, leaving all that it had taken up from the root united into a pungent aromatic resin. This root promises, from its sensible qualities, to be a medicine of considerable utility, though little regarded in common practice; the only official composition in which it is an ingredient, is the *pulvis ari compositus*. Stahl, Hoffman, and other German physicians, are extremely fond of it; and recommend it as an excellent stomachic, resolvent, detergent, diuretic, diaphoretic, and alexipharmic. They often gave it with success, in scorbutic and cutaneous disorders, foulness of the blood and juices, tumors and obstructions of the glands, and diseases proceeding from a deficiency of the fluid secretions in general. Boerhaave directs the use of it in asthmatic and hydropic cases, where the strongest resolvents are indicated; the form he prefers is a watery infusion; but the spirituous tincture possesses the virtues of the root in much greater perfection. Aniseeds have an aromatic smell, and a pleasant warm taste, accompanied with a degree of sweetness. Water extracts very little of their flavour; rectified spirit the whole. The seeds are in the number of the four greater hot seeds; their principal use is in cold flatulent disorders, where tenacious phlegm abounds, and in the gripes to which young children are subject. Frederic Hoffman strongly recommends them in sicknesses of the stomach, diarrhoeas, and for

strengthening the tone of the viscera in general; and thinks they well deserve the appellation given them by Helmont, *intestinorum solamen*. The smaller kind of aniseeds brought from Spain are preferred.

* PIMPING. *adj.* [*pimple mensch*, a weak man, Dutch.] Little; petty; as, a *pimping* thing. *Skinner*.

PIMPLA, a mountain of Macedonia, near Olympus, sacred to the Muses, hence called PIMPLEÆ.

(1.) * PIMPLE. *n. s.* [*pompette*, Fr.] A small red pustule.—If Rosalinda is unfortunate in her mole, Nigranilla is as unhappy in a *pimple*. *Spektor*.

If e'er thy gnome could spill a grace,
Or raise a *pimple* on a beauteous face. *Pope*.
—The rising of a *pimple* in her face will make her keep her room two or three days. *Law*.

(2.) PIMPLES, CURE FOR. By mixing equal quantities of the juice of house-leek, *sedum minus*, passed through paper, and of spirit of wine rectified by itself, a white coagulum of a very volatile nature is formed, which Dr Bughart commends for curing pimples of the face; and says, that the thin liquor separated from it with sugar-candy is an excellent remedy for thick viscid phlegm in the breast.

PIMPLEÆ, and } names given to the Muses,
PIMPLEADES, } from Mount PIMPLA. *Her. i. Od. i. 26. Strab. 10.*

* PIMPLED. *adj.* [from *pimple*.] Having red pustules: full of pimples; as, his face is *pimpled*.

PIMPRINA, an ancient town of India, on the Indus. *Arrian*.

(1.) * PIN. *n. s.* [*espingle*, Fr.] *spina*, *spinula*, Lat. *spilla*, Italian; rather from *pennum*, low Latin. [*Isidore*.] 1. A short wire with a sharp point, and round head, used by women to fasten their cloaths. —I'll make thee eat iron like an ostridge, and swallow my sword like a great *pin*, ere thou and I part. *Shak.*

Whatever spirit, careless of his charge,
His post neglects, or leaves the fair at large,
Shall feel sharp vengeance soon o'ertake his
sins,
Be stopt in vials, or transfixt with *pins*. *Pope*.
2. Any thing inconsiderable, or of little value.—
Soon after comes the cruel Saracen,
And sternly looks at him, who not a *pin*
Does care for look of living creature's eye. *Spenser*.

His fetch is to flatter to get what he can;
His purpose once gotten, a *pin* for thee then. *Tupper*.

Tut, a *pin*; this shall be answered. *Shak.*
—'Tis not a *pin* matter whether the fact be true or false. *L'Estrange*. 3. Any thing driven to hold things together; a peg; a bolt.—

With *pins* of adamant
And chains, they made all fast. *Milton*.
4. Any slender thing fixed in another body.—
Bedlam beggars, with roaring voices,
Stick in their numbed and mortified bare arms,
Pins, wooden pricks, nails, sprigs of rosemary. *Shak.*

—These bullets shall rest on the *pins*; and there must be other *pins* to keep them, *Wilkins*. 5. That

That which locks the wheel to the axle; a lynch pin. 6. The central part.—Romeo is dead, the very *pin* of his heart cleft with the blind hautboy's buttshaft. *Shak.* 7. The pegs by which musicians intend or relax their strings. 8. A note; a strain. In low language.—A fir tree, in a vain spiteful humour, was mightily upon the *pin* of commending itself. *L'Estrange*.—As the woman was upon the peevish *pin*, a poor body comes, while the froward fit was upon her, to beg. *L'Estrange*. 9. A horny induration of the membranes of the eye. *Hanmer*. *Skinner* seems likewise to say the same. I should rather think it an inflammation, which causes a pain like that of a pointed body piercing the eye.—

Blind with the *pin* and web.

Shak.

10. A cylindrical roller made of wood.—

They drew his brownbread face on pretty *pins*.

And made him stalk upon two rolling *pins*.

Corbet.

11. A noxious humour in a hawk's foot. *Ainsl.*

(2.) *PINS*, in commerce, are made of brass wire. In 1543, by statute 34 and 35 of Henry VIII. cap. vi. it was enacted, "That no person shall put to sale any pinnes but only such as shall be double-headed, and have the heads soldered fast to the shank of the pins, well smoothed, the shank well shapen, the points well and round filed, cauted, and sharpened." From the above extract it should appear that the art of pin-making was but of late invention, probably introduced from France; and that our manufactories since that period have wonderfully improved. Though pins are apparently simple, their manufacture is curious and complex. The following account of it is given in Ellis's *campagna* of London. "When the brass wire, of which the pins are formed, is first received at the manufactory, it is generally too thick for the purpose of being cut into pins. The first operation, therefore, is that of winding it off from one wheel to another with great velocity, and causing it to pass between the two, through a circle in a piece of iron of smaller diameter; the wire being thus reduced to its proper dimensions, is straightened by drawing it between iron pins, fixed in a board in a zig-zag manner, but so as to leave a straight line between them; afterwards it is cut into lengths of three or four yards, and then into smaller ones, every length being sufficient to make six pins; each end of these is ground to a point, which was performed, when I viewed the manufactory, by boys who sat each with two small grinding stones before him, turned by a wheel. Taking up a handful, he applies the ends to the coarsest of the two stones, being careful at the same time to keep each piece moving round between his fingers, so that the points may not become flat; he then gives them a smoother and sharper point, by applying them to the other stone, and by that means a lad of 12 or 14 years of age is enabled to point about 16,000 pins in an hour. When the wire is thus pointed, a pin is taken off from each end, and this is repeated till it is cut into six pieces. The next operation is that of forming the heads, or, as they term it, *head-pin*ing; which is done by means of a spinning-wheel, one piece of wire being thus with astonishing rapidity wound round

another, and the interior one being drawn out, leaves a hollow tube between the circumvolutions; it is then cut with sheers, every two circumvolutions or turns of the wire forming one head; these are softened by throwing them into iron pans, and placing them in a furnace till they are red-hot. As soon as they are cold, they are distributed to children, who sit with anvils and hammers before them, which they work with their feet, by means of a lathe, and taking up one of the lengths, they thrust the blunt end into a quantity of the heads which lie before them, and catching one at the extremity, they apply them immediately to the anvil and hammer, and by a motion or two of the foot, the point and the head are fixed together in much less time than it can be described, and with a dexterity only to be acquired by practice; the spectator being in continual apprehension for the safety of their fingers ends. The pins are now finished as to its form, but still it is merely brass; it is therefore thrown into a copper, containing a solution of tin and the leys of wine. Here it remains for some time, and when taken out, assumes a white, though dull appearance; in order therefore to give it a polish, it is put into a tub containing a quantity of bran, which is set in motion by turning a shaft that runs through its centre, and thus, by means of friction, it becomes perfectly bright. The pin being complete, nothing remains but to separate it from the bran, which is performed by a mode exactly similar to the winnowing of corn; the bran flying off and leaving the pin behind fit for immediate sale. See *NEEDLE*, § 2.

* *To PIN*, *v. a.* [from the noun. 1. To fasten with pins.—'Tis only a paper *pin*'d upon the breast. *Pope*.—

Not Cynthia when her manteau's *pin*'d awry,
E'er felt such rage. *Pope*.

2. To fasten; to make fast.—

Our gates,

Which yet seem shut, we have but *pin*'d with
ruffles. *Shak. Macbeth*.

3. To join; to fix; to fasten.—She lifted the princess from the earth, and so locks her in embracing, as if she would *pin* her to her heart. *Shak*.—If removing my consideration from the impression of the cubes to the cubes themselves, I shall *pin* this one notion upon every one of them. *Digby of Bodies*.—

I've learned how far I'm to believe

Your *pinning* oaths upon your sleeve. *Hudibras*.—They help to cozen themselves, by chusing to *pin* their faith on such expositors. *Locke*.—It cannot be imagined, that so able a man should take so much pains to *pin* so closely on his friend a story which, if he himself thought incredible, he could not but also think ridiculous. *Locke*. 4. [*Pindan*, Sax.] To shut up; to inclose; to confine; as, in pinfold. This written like to *pen*.—If all this be willingly granted by us, which are accused to *pin* the word of God in so narrow room, let the cause of the accused be referred to the accuser's conscience. *Hooker*.

PINACIA, among the Athenians, were tablets of brass inscribed with the names of all those citizens in each tribe who were duly qualified and willing to be judges of the court of Areopagus. These tablets were cast into a vessel provided for the

the purpose, and the same number of beans, 100 being white, and all the rest black, were thrown into another. Then the names of the candidates and the beans were drawn out one by one, and they whose name were drawn out together with the white beans were elected judges or senators. In Solon's time there were only four tribes, each of which chose 100 senators; but the number of tribes afterward, increasing, the number of senators or judges increased to so many hundreds more.

PINÆUS. See PINEAU.

PINANG, the Chinese name of the *Aracca Catechu*, Lib. See ARECA, N° 1.

PINARE, in ancient geography: 1. An island in the Ægean Sea: 2. A town of Syria, S. of Mount Amanus (*Plin. v. c. 25.*): 3. A town of Lycia. *Strab. xiv.*

PINARUS, a river which runs between Syria and Cilicia, and falls into the Sea, near Issus; now called DELIFOU. (*Diogen.*)

(1.) PINAS, a town of Spain, in Granada.

(2.) PINAS ISLAND, an island in the Gulf of Honduras, lying off Trivigillo Bay.

(3.) PINAS POINT, the E. point of Panama Bay. Lon. 80. 30. W. Lat. 6. 15. N.

(4.) PINAS PORT, a sea-port on the SW. coast of the Isthmus of DARIEN, near Pinas Point, 36 miles N. by W. of Port Quemada. The coast abounds with *pines*, whence the name.

PINASTER. See PINUS.

* PINCASE. *n. f.* [*pin and case.*] A pincushion. *Ainsworth.*

* PINCERS. *n. f.* [*pincette*, French.] 1. An instrument by which nails are drawn, or any thing is gripped, which requires to be held hard.—

Amendment ready still at hand did wait,

To pluck it out with pincers fiery hot,
That soon in him was left no one corrupt jot.

Spenser.

2. The claw of an animal.—Every ant brings a small particle of that earth in her pincers, and lays it by the hole. *Guardian.*

* PINCH. *n. f.* [*pinçon*, Fr. from the verb.]

1. A painful squeeze with the fingers.

A pinch must for the mortal sin compound.

Dryden.

2. A gripe; a pain given.—

There cannot be a pinch in death

More sharp than this is. *Shak. Cymbeline.*

3. Oppression; distress inflicted.—

Return to her! no, rather I chuse

To be a comrade with the wolf and owl,

Necessity's sharp pinch. *Shak. King Lear.*

—A farmer was put to such a pinch in a hard winter, that he was forced to feed his family upon the main rock. *L'Estr.* 4. Difficulty; time of distress.—A good sure friend is a better help at a pinch than all the stratagems of a man's own wit. *Bacon.*—The devil helps his servants for a season, but when they come once to a pinch, he leaves 'em in the lurch. *L'Estrange.*—The commentators never fail him at a pinch. *Dryden.*—

They at a pinch can bribe a vote.

Swift.

5. In all the senses except the first it is used only in low language.

(1.) * To PINCH. *v. a.* [*pincer*, French.] 1. To squeeze between the fingers, or with the teeth.—

When the doctor spies his vantage ripe,

To pinch her by the hand,

The maid hath given consent.

Shak.

2. To hold hard with an instrument. 3. To squeeze the flesh till it is pained or livid.—

Thou shalt be pinched

'As thick as honey-combs.

Shak. Tempest.

—He would pinch the children in the dark so hard, that he left the print in black and blue. *Arbutnot.*

4. To press between hard bodies. 5. To gall; to fret.—As they pinch one another by the disposition, he cries out, no more. *Shak. Anthony and Cleopatra.* 6. To gripe; to oppress; to straiten.—

Want of room upon the earth's pinching a whole nation, begets the remediless war. *Raleigh's Essays.*—

She pinched her belly with her daughter's too.

Dryden.

—Nicholas Frog would pinch his belly to save his pocket. *Arbutnot.* 7. To distress; to pain.—

Avoid the pinching cold and scorching heat.

Milton.

The sharp year pinches. *Thomson's Autumn.*

8. To press; to drive to difficulties.—The beaver, when he finds himself hard pinched, bites 'em off.

L'Estr.—The respondent is pinched with a strong objection, and is at a loss for an answer. *Watts.*

9. To try thoroughly; to force out what is contained within.—This is the way to pinch the question. *Collier.*

(2.) * To PINCH. *v. n.* 1. To act with force, so as to be felt; to bear hard upon; to be puzzling.

—A difficulty pinches. *Glanville.*—

But thou

See'st where the reasons pinch, and where they fail.

Dryden.

2. To spare; to be frugal.—There is that waxeth rich by his wariness and pinching. *Ecclus. xi. 18.*

The poor that scarce have wherewithal to eat, Will pinch and make the finging boy a treat.

Dryden.

The bounteous player outgave the pinching lord.

Dryden.

PINCHBECK. *n. f.* An artificial metal, compounded of COPPER and ZINC. The proportions, according to Dr Thomson, are these: "When the alloy contains three parts of zinc and four of copper, it assumes a colour nearly the same with gold, but it is not so malleable as brass. It is then called pinchbeck, prince's metal, or Prince Rupert's metal."

* PINCHFIST. PINCFENNY. *n. f.* [*pinch, fist, and penny.*] A miser. *Ains.*

PINCHINA. See PICHINCHA.

(1.) PINCKNEY, an island near the coast of South Carolina.

(2.) PINCKNEY, a district of South Carolina, lying W. of Camden and Cheraw districts. It is divided into four counties, named York, Chester, Union, and Spartanburgh. It contained, in 1795, 25,870 citizens, who send to the State Legislature three senators and nine representatives; and, in conjunction with Washington, send one member to Congress.

PINCKNEYVILLE, a post-town of S. Carolina, in Union county, capital of the above district. It is seated on Broad River, at the mouth of the Pacolet, 75 miles NW. of Columbia.

PINCUM,

PINCUM, in ancient geography, a town of Mæsia Superior, now called GRADISCA.

* PINCUSHION. *n. f.* [*pin* and *cushion*.] A small bag stuffed with bran or wool on which pins are stuck.—She would ruin me in silks, were not the quantity that goes to a large *pincushion* sufficient to make her a gown and petticoat. *Guardian*.—Thou art a retailer of phrases, and dost deal in remnants of remnants, like a maker of *pincushions*. *Congreve*.

PINDAR, the prince of lyric poets, was born at Thebes, about 520 years B. C. He received his first musical instructions from his father, who was a flute-player by profession; after which, according to Suidas, he was placed under Myrtis, a lady of distinguished abilities in lyric poetry. During this period he became acquainted with the poetess CORINNA, who was likewise a student under MYRTIS, and, Pausanias says, was one of the most beautiful women of her time. Plutarch tells us, that Pindar profited from the lessons which Corinna, more advanced in her studies, gave him at this school. The first poetical effusions of a genius so full of fire and imagination as that of Pindar would be wild and luxuriant; and Lucian has preserved six verses, said to have been the exordium of his first essay; in which he crowded almost all the subjects for song which ancient history and mythology then furnished. Upon communicating this attempt to Corinna, she told him smiling, that he should sow with the *hand*, and not empty his *whole sack* at once. Pindar, however, soon quitted the leading strings of his poetical nurses, and became the disciple of Simonides, now in extreme old age: after which he soon surpassed all his masters, and acquired great reputation over all Greece; but was less honoured in his own country than elsewhere; for at Thebes he was often said to be vanquished, in the musical and poetical contests, by candidates of inferior merit. Indeed at that period little fame in these accomplishments was to be acquired, otherwise than by entering these lists. Accordingly we find, that both Myrtis and Corinna publicly disputed the prize with him at Thebes. He obtained a victory over Myrtis, but was vanquished five different times by Corinna. But this, says Pausanias, was because the judges were more sensible to the charms of beauty than to those of music and poetry. When he quitted that city, as his judgment was matured, he avoided the errors for which he had been chastised, and suddenly became the wonder and delight of all Greece. Every hero, prince, and potentate, desirous of lasting fame, courted the muse of Pindar. He seems to have been often present at the festivals, of the Olympian, Pythian, Nemean, and Isthmian games, as may be inferred from several expressions in the odes which he composed for the victors in them all. Those at Olympia, who were ambitious of having their achievements celebrated by Pindar, applied to him for an ode, which was first sung in the Prytaneum or town-hall of Olympia, where there was a banqueting room, set apart for the entertainment of the conquerors. Here the ode was rehearsed by a chorus, accompanied by instruments. It was afterwards performed in the same manner at the tri-

umphal entry of the victor into his own country, in processions or at the sacrifices: that were made with great pomp and solemnity on the occasion. There is no great poet in antiquity whose moral character has been less censured than that of Pindar. Plutarch has preserved a single verse of his *Epicidium* or *Dirge* that was sung at his funeral; which, short and simple as it is, implies great praise: *This man was pleasing to strangers, and dear to his fellow-citizens*. His works abound with precepts of the purest morality: and it does not appear that he ever traduced ven his enemies, comforting himself, for their malignity, by a maxim which he inserted in his first *Pænic*, and which afterwards became proverbial, *that it is better to be envied than pitied*. Pausanias says, Pindar's character as a poet was consecrated by the god of verse himself, who, by an express oracle, ordered the people of Delphos to set apart for Pindar one half of the first-fruit offerings brought by the religious to his shrine, and to allow him a conspicuous place in his temple, where in an iron chair he used to sit and sing his hymns in honour of that god. This chair was remaining in the time of Pausanias, several centuries after, and shown to him as a relic worthy of the sanctity and magnificence of that place. Fabricius tells us, that Pindar lived to the age of 90; and, according to the chronology of Dr Blair, he died 435 years B. C. aged 86. His fellow citizens erected a monument to him in the Hippodrome at Thebes, which was extant in the time of Pausanias; and his renown was so great after his death, that his posterity derived very considerable honours and privileges from it. When Alexander the Great attacked the city of Thebes, he gave express orders to his soldiers to spare the house and family of Pindar. The Lacedæmonians had done the same before this period; for when they ravaged Ætolia and burned the capital, the following words were written upon the door of the poet: *Frebear to burn this house, it was the dwelling of Pindar*. Respect for the memory of this great poet continued so long, that, even in Plutarch's time, the best part of the sacred victim at the Theoxenia festival was appropriated to his descendants.

PINDARIC ODE, in poetry, an ode formed in imitation of the manner of Pindar. See *POETRY*.

PINDASUS, a mountain of Troas.

PINDENISSUS, a town of Cilicia, on the borders of Syria. Cicero, when proconsul of Asia, took it after a siege of 25 days. *Cic. Ep. ii. 10.*

(1.) PINDUS, in ancient geography, an extensive chain of mountains, in Thessaly, inhabited by different people of Epirus and Thessaly, separating Macedonia, Thessaly, and Epirus; having Macedonia on the N. the Perræbi on the W. and the Dolopes on the S. (*Strabo*). It was sacred to Apollo and the Muses.

(2, 3.) PINDUS, a Doric city of Ætolia, situated on a cognominal river, which falls into the Cephissus. *Strabo*.

* PINDUST. *n. f.* [*pin* and *dust*.] Small particles of metal made by pointing pins.—The little parts of *pindust*, when mingled with sand, cannot, by their mingling, make it lighter. *Digby*.

(1.) * PINE. *n. f.* [*pinus*, Latin; *pin*, French.]—The pine-tree hath argentaceous flowers or katkins,

kins, which are produced at remote distances from the fruit, on the same tree, the seeds are produced in squamous cones; to which should be added, that the leaves are longer than those of a fir-tree, and are produced by pairs out of each sheath. *Mille.*—

You mayas well forbid the mountain *pin*
To wag the high tops. *Shak.*

Thus drops this lofty *pine*, and hangs his
sprays. *Shak.*

(3.) *PINE*, i. botany. See *PINUS*.

(3.) *PINE*, GROUND. See *TEUCRIUM*.

(4.) *PINE ISLAND*, an island in the Gulf of Mexico, near the Coast of W. Florida. Lon. 88. 18. W. Lat. 30. 8. N.

(5.) *PINE*, LOW HEATH, a species of *CORIS*.

(6.) *PINE*, STINKING GROUND. See *CAMPHOROSMA*.

(1.) * *To PINE*, v. n. [*piman*, Saxon; *pijnen*, Dutch.] 1. To languish; to wear away with any kind of misery.—

My hungry eyes, through greedy covetise,
With no contentment can themselves suffice;
But having, *pine*, and having not, complain. *Spenser.*

I burn, I *pine*, I perish,

If I achieve not this young modest girl. *Shak.*
—Since my young lady's going into France, the
fool hath much *pin*ed away. *Shak.*—

See, see the *pin*ing malady of France. *Shak.*
—You shall not mourn, but *pine* away for your
iniquities, *Ezekiel* xxiv. 23.—

The wickel with anxiety of mind

Shall *pine* away. *Sands.*

To me, who with eternal famine *pine*,
Alike is hell, or paradise, or heav'n. *Milton.*

Welcome be new, whose every day,
Restoring what was snatch'd away
By *pin*ing sickness from the fair,
That matches beauty does repair. *Waller.*

The roses wither, and the lilies *pine*. *Tickell.*

2. To languish with desire.—

We may gain!
Do faithful homage and receive free honours:
All which we *pine* for. *Shak.*

We stood amazed to see your mistress mourn,
Unknowing that she *pin*'d for your return. *Dryd.*
Your new commander need not *pine* for ac-
tion. *Philips.*

(2.) * *To PINE* v. n. 1. To wear out; to make
to languish.—

Part us; I towards the north,
Where shivering cold and sickness *pin*es the
clime. *Shak.*

Look rather on my pale cheek *pin*'d:
There view your beauties. *Carew.*

Becoe *pin*'d with pain,
Her age and anguish from these rites detain. *Dryden.*

Thus tender Spencer liv'd, with mean repast
Content, depress'd with penury, and *pin*'d
In foreign realm. *Philips.*

2. To grieve for; to bemoan in silence.—

Virtue, in her shape how lovely, saw, and
pin'd. *Milton.*

PINEA, or *PIONS*, in commerce, is a term
used in Peru and Chili for a kind of light, porous

masses or lumps, formed of a mixture of mercury and silver dust from the mines. The ore, or mineral of silver, when dug out of the veins of the mine, is first broken and then ground in mills for the purpose, driven by water with iron pestles, each of 200 pounds weight. The mineral, when thus pulverized, is next sifted, and then worked up with water into a paste; which, when half dry, is cut into pieces, called *cuernos*, a foot long, weighing each about 2500 lb. Each piece or *cuerno* is again kneaded up with sea-salt, which, dissolving, incorporates with it. They then add mercury, from 10 to 20 lb. for each *cuerno*, kneading the paste afresh until the mercury be incorporated therewith. This office, which is exceedingly dangerous on account of the noxious qualities of the mercury, is always made the lot of the poor Indians. This amalgamation is continued for 8 or 9 days; and some add lime, lead, or tin ore, &c. to forward it; and, in some mines, they are obliged to use fire. To try if the mixture and amalgamation be sufficient, they wash a piece in water; and if the mercury be white, it is a proof that it has had its effect; if black, it must be still farther worked. When finished, it is sent to the lavatories, which are large basins that empty successively into one another. The paste, &c. being laid in the uppermost of these, the earth is then washed from it into the rest by a rivulet turned upon it; an Indian, all the while, stirring it with his feet, and two other Indians doing the like in the other basins. When the water runs quite clear out of the basins, the mercury and silver are found at bottom incorporated. This matter they call *pella*, and of this they form the pineas, by expressing as much of the mercury as they can; first, by putting it in woollen bags, and pressing and beating it strongly; then, by stamping it in a kind of woollen mould, of an octagonal form, at bottom whereof is a brass plate pierced full of little holes. The matter, when taken out of the mould, is laid on a trivet, under which is a large vessel full of water; and the whole being covered with an earthen head, a fire is made around. The mercury still remains in the mass, and is thus reduced into fumes, and, at length condensing, it is precipitated into the water, leaving behind it a mass of silver grains of different figures, which only joining or touching at the extremes, render the matter very porous and light. This, therefore, is the pinea or pigne, which the workmen endeavour to sell secretly to vessels trading to the South Sea; and from which those, who have ventured to engage in so dangerous a commerce, have made such vast gains. Indeed the traders herein must be very careful; for the Spanish miners are arrant knaves, and to make the pineas weigh the more, they often fill the middle with sand or iron.

(1.) * *PINEAL*, adj. [*pineale*, Fr.] Resembling a pine-apple. An epithet given by *Des Cartes*, from the form, to the gland which he imagined the seat of the soul.—Courtiers and spaniels exactly resemble one another in the pineal gland. *Arbutnot.*

(2.) *PINEAL GLAND*, a gland in the 3d ventricle of the brain, so called from its resembling a pine-apple. See *ANATOMY*, Index.

(1.) * *PINE-*

(1.) * PINE-APPLE. *n. f.* The Anana named from its resemblance to the cone of pines.—The *pine-apple* hath a flower consisting of one leaf, divided into three parts, and is funnel-shaped; the embryos are produced in the tubercles; these become a fleshy fruit full of juice; the seeds, which are lodged in the tubercles, are very small, and almost kidney-shaped. *Müller*.—Try if any words can give the taste of a *pine-apple*. *Locke*.—If a child were kept where he never saw but black and white, he would have no more ideas of scarlet, than he that never tasted a *pine-apple* has of that particular relish. *Locke*.

(2.) PINE-APPLE. See BROMELIA.

(3.) PINE-APPLE, WILD. See RENEALMIA.

(1.) PINEAU, Gabriel Du, an eminent French lawyer, born at Angers in 1573. After practising some time at Angers, he went to Paris, and pled with eclat before the parliament and great council. Upon his return to Angers, he became a counsellor in the presidial court. He was consulted by all the neighbouring provinces, and had an active hand in all the great affairs of his time. Mary de Medicis made him master of requests, and, in her disgrace, wished to support herself by his credit and counsels; but Du Pineau, equally dutiful to the monarch and his mother never failed to inculcate sentiments of peace. In 1632, Lewis XIII. by way of reward, appointed him mayor and captain-general of the city of Angers: a situation in which he merited the flattering title of *Father of the people*. He had no respect of persons; for he was equally accessible to the poor and the great. This worthy citizen died the 15th Oct. 1644, aged 71. His house was a kind of academy, where regular conferences were held, and attended by young officers, advocates, and other literary characters. His writings are, 1. Latin notes, in addition to those of Du Moulin, upon the canon law, printed along with the works of that eminent lawyer by the care of Francis Pinson. 2. Commentaries, observations, and consultations upon several important questions respecting the laws both of Anjou and of France, with some dissertations upon different subjects, &c. reprinted in 1725 in 2 vols. fol. by Livoniere, with remarks.

(2.) PINEAU, or PINÆUS, Severin Du, a native of Chartres, and first surgeon to the king of France. He was very skilful in lithotomy; and has left behind him, 1. A Discourse concerning the Extraction of the Stone in the Bladder, published in 1610 in 8vo. 2. A treatise *De Virginitatis Notis*, printed at Leyden 1641, in 12mo. He died at Paris, in 1619.

PINEDA, John, a learned Jesuit, born at Seville of a noble family. He entered into that society in 1572. He taught philosophy and divinity in several colleges; devoted his time to the study of the Scriptures; and for that purpose made himself master of the oriental languages. His works are, 1. Commentaries upon Job, in 2 vols. folio. 2. Two upon Ecclesiastes. 3. A General History of the Church, in Spanish, 4 vols. folio. 4. A History of Ferdinand III. in Spanish, folio. He died in 1637, much regretted.

PINELLI, John Vincent, a learned Italian, born at Naples, son of Count Pinelli, a noble Genoese, who had settled in that city, and had achieved
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quired a handsome fortune in trade. After receiving a liberal education he repaired to Padua, at the age of 24. He had an excellent library, consisting of a choice collection of books and MSS. which he continued to enrich till the hour of his death. His literary correspondence, not only in Italy, but through the most of Europe, procured him all the new works worthy of a place in his collection. The authors were often forward to pay their respects to him. In many cities of Italy he had persons employed to search, at least one a month, the stalls of those artificers, who make use of old parchments, such as lute-makers, sieve-wrights, and others; and thus often saved from destruction some valuable fragments. His passion for knowledge embraced all the sciences; but history, medals, antiquities, natural history, and botany, were his favourite studies. He was consulted from all quarters, by the learned world. He corresponded with Justus Lipsius, Joseph Scaliger, Sigonius, Possévin, Peter Pithou, and many others, who all paid the highest compliments to his erudition. Insensible to all the pleasures of life, and acquainted only with those of the mind, he had a great dislike to plays, entertainments, shows, and everything which most excites the curiosity of other men. During 43 years that he lived at Padua, he was never known to be out of the city but twice; once on occasion of a plague which infected it; and once on a voyage to Naples, which he made at the earnest solicitation of his friends. In short, Pinelli was generous, sympathizing, and compassionate, particularly to men of letters, whose wants he often anticipated. His zeal for the advancement of science rendered him very communicative of his knowledge and of his books. He died in 1601, aged 68, without having published any work. Paul Gualdo, who has written Pinelli's life, says, that when his rich library was transported by sea to Naples, it was packed up in 130 chests, of which 14 contained MSS.; but it did not go wholly to his heirs. The senate of Venice caused their zeal to be set upon the MSS. and took away what concerned the affairs of the republic, to the number of 300 pieces.—“I compare (says De Thou) Pinelli to Titus Pomponius; for, as that illustrious Roman was called *Attic*, Pinelli also bore the title of *Venetian*, on account of the great affection which the republic of Venice had for him.

(1.) PINES, or PINEX, an island on the SW. coast of Cuba, from which it is divided by a deep strait, 18 miles wide. The island is 25 miles long and 13 broad, and abounds with pines, and good pasture. Lon. 83. 25. W. Lat. 21. 30. N.

(2.) PINES, BAY OF, a bay on the coast of W. Florida. Lon. 88. 21. W. Lat. 30. 20. N.

(3.) PINES, CAPE, or CAPE PINE, a cape on the S. coast of Newfoundland, 24 miles W. of Cape Race. Lon. 53. 40. W. Lat. 46. 42. N.

(4.) PINES, ISLAND OF, an island in the S. Pacific Ocean, near the S. coast of New Caledonia, so named by Capt. Cook from its abounding with tall pines. It is about 14 miles broad, but remarkably high in the middle, being quite a pointed hill, sloping on all sides to the extremities, which are low. Lon. 167. 42. E. Lat. 22. 38. S.

(5.) PINES, ISLAND OF, an island of S. America, near
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near the coast of Terra Firma, with a good harbour, formed by two adjacent isles and the main land; 123 miles E. of Porto Bello. Lon. 80. 15. W. Lat. 9. 12. N. or according to Mr Crutwell, Lon. 77. 36. W. Lat. 8. 35. N.

(6.) PINES, ISLAND OF THE, one of the Samaboe isles. See DARIEN, § 1, 1.

PINET, Antony Du, lord of Noroy, a native of Bisançon, who lived in the 16th century. He was strongly attached to the Protestant religion, and a bitter enemy to the church of Rome. His books, entitled *La Conformité des Eglises Reformées de France, de l'Eglise primitive*, Lyons, 1564, in 8vo; and the notes he added to the French translation of the *Keys of the Pope's Censure*, printed at Lyons, in 8vo, 1564, and reprinted at Amsterdam in 1700, in 12mo, plainly discover his sentiments. He published the last mentioned performance under this title: *Traité des parties casuelles de la boutique du Pape*, in Latin and French, with some notes taken from decrees, councils, and canons, to ascertain the discipline anciently observed in the church. His translation of Pliny's Natural History, with notes, printed at Lyons, in 2 vols folio, 1566, and at Paris, 1603, was much read. Pinet also published Plans of the principal fortresses in the world, at Lyons, 1564, in folio.

PINEZ. See PINES, N° 1.

* PINFEATHERED. *adj.* [*pin* and *feather*.] Not fledged; having the feathers yet only beginning to shoot.—

We see some raw *pinfeather'd* thing

Attempt to mount.

Dryden.

* PINFOLD. *n. f.* [*pin* and *fold*.] A place in which beasts are confined.—The English, nothing suspecting, are taken at an advantage, like sheep in the *pinfold*. *Spenser on Ireland.*

I care not for thee.—

—If I had thee in *Lipshury pinfold*, I would make thee care for me. *Shak. K. Lear.*—

Consid' and pesser'd in this *pinfold* here.

Milton.

Oaths were not purpos'd more than law

To keep the good and just in awe,

But to confine the bad and sinful,

Like moral cattle in a *pinfold*.

Hudib.

* PINGLE. *n. f.* A small close; an inclosure. *Ainsworth.*

PINGRE, Alexander Guy, a celebrated French astronomer, born in 1709. He was a zealous advocate for the freedom of the French church, against the bishops; for which he was five times taken up by lettres de cachet. Having made great proficiency in astronomy, he published *A Calculation of an Eclipse of the Moon*, on the 23d Dec. 1749. In 1760, the Academy of Sciences appointed him to observe the transit of Venus. He calculated the eclipses for 1000 before our Saviour's birth. On the death of M. De Lisle, he was elected geographical astronomer. He translated Manilius's poetical treatise on Astronomy. He afterwards studied botany with success. He died in 1796.

PINGUEDO. See FAT, § 3.

PINGICULA, BUTTERWORT, a genus of the monogynia order; belonging to the diandria class of plants; and in the natural method rank-

ing under the 24th order, *Corydalis*. There are four species; of which the most remarkable is

PINGICULA VULGARIS, common butterwort, or *Yorkshire Sanicle*, grows commonly on bogs or low moist grounds in England and Scotland. Its leaves are covered with soft, upright pellucid prickles, secreting a glutinous liquor. The flowers are pale red, purple, or deep violet colour, and hairy within. If the fresh gathered leaves of this plant are put into the strainer through which warm milk from the cow is poured, and the milk set by for a day or two to become acedent, it acquires a consistency and tenacity, and neither whey nor cream separate from it. In this state it is an extremely grateful food, and as such, is used by the inhabitants of the north of Sweden. There is no further occasion to have recourse to the leaves; for half a spoonful of this prepared milk, mixed with fresh warm milk, will convert it to its own nature, and this again will change another quantity of fresh milk, and so on without end. The juice of the leaves kills lice; and the common people use it to cure the cracks or chops in cows udders. The plant is generally supposed injurious to sheep, by occasioning in them that disease called the *rot*. But from experiments made on purpose, and conducted with accuracy, it appears, that neither sheep, cows, goats, horses, or swine will feed upon this plant. Wherever this plant is found, it is a certain indication of a boggy soil. The Laplanders make an agreeable food with the milk of the rein-deer by the fresh leaves of this plant, like that of the Swedes with the milk of cows, and with the same consequences.

* PINGUID. *adj.* [*pinguis*, Lat.] Fat; unctuous. Little used.—Some clays are more *pinguid*, and others more slippery. *Mortimer.*

(I.) PINGUIN, in geography, an island near the Cape of Good Hope, abounding with pinguins.

(II.) PINGUIN, or PENGUIN, in ornithology, a genus of birds of the order of palmipedes; distinguished by Mr Latham by the following characters: The bill is strong, strait, more or less bending towards the point, and furrowed on the sides; the nostrils are linear, and placed in the furrows; the tongue is covered with strong spines, pointing backwards; the wings are small, very like fins, and covered with no longer feathers than the rest of the body, and therefore useless in flight; the body is clothed with thick short feathers, having broad shafts, and placed as compactly as the scales of fishes; the legs are short, thick, and placed very near the vent; the toes are 4, all placed forwards, the interior are loose, and the rest are webbed; the tail is very stiff, consisting of broad shafts scarcely webbed. Pinguins are inhabitants of S. latitudes only; being, as far as is yet known, found only on the coasts of S. America, from Port Desire to the Straits of Magellan; and Frezier says they are found on the west coast as high as Conception. In Africa they seem to be unknown, except on a small isle near the Cape of Good Hope, which takes its name from them. They are found in vast numbers on land during the breeding season; for they seldom come

on shore but at that time: they form burrows under ground like rabbits; and the idles they frequent are perfectly undermined by them. Their attitude on land is quite erect, and on that account they have been compared by some to pygmies, by others to children with white bibs. They are very tame, and may be driven like a flock of sheep. In water they are remarkably active, and swim with vast strength, assisted by their wings, which serve instead of fins. Their food in general is fish; not but that they will eat grass like geese. Mr Latham remarks, that this genus appears to hold the same place in the southern division of the earth that the awks do in the northern; and that, however authors may differ in opinion on this head, they ought not to be confounded with one another. The penguin is never seen but in the temperate and frigid zones S. of the equator, while the awk only appears in the parallel latitudes N. of the equator; for neither of these genera have yet been observed within the tropics. Forster, in his voyage (vol. i. pag 92.), says, he saw one for the first time in lat. 48° S. nor are they ever met with nearer than 40° S. (*Id. Introd. Disc. on Penguins, Comment. Got. vol. 3d.*) The wings of the penguin are scarcely any thing else than mere fins, while the awk has real wings and gills, though they be but small. The former has four toes on each foot, the latter only three. While swimming, the penguin sinks wholly above the breast, the head and neck only appearing out of the water, while the awk, like most other birds, swims on the surface. There are several other peculiarities which serve to distinguish the two genera, but what we have mentioned are doubtless sufficient. "The bodies of the penguin tribe (says our author) are commonly so well and closely covered with feathers, that no wet can penetrate; and as they are in general excessively fat, these circumstances united secure them from cold. They have often been found 700 leagues from land; and frequently on the mountains of ice, on which they seem to ascend without difficulty, as the soles of their feet are very rough and suited to the purpose." Mr Latham enumerates nine different species of this genus, besides two varieties of the black-footed penguin or *DIOMEDEA*.

1. PINGUIN, ANTARCTIC, is about 23 inches long, and weighs about 1½ lb. The bill is upwards of 2½ inches long; the upper parts of the body are black, the under are glossy white; beneath the chin there is narrow streak of a blackish colour, passing backward towards the hind head, a little bent about the region of the ears; the wings are much the same as in the other species; the tail is cuneiform: the feathers, or rather bristles, of which it is composed, are black, and in number 32; the legs are of a flesh colour, and the soles of the feet are black. "This species (says Latham,) inhabits the south sea, from 48° to the antarctic circle; and is frequently found on the ice on mountains and islands, which it ascends; it is a pretty numerous species. Our last voyagers found them in plenty in the Isle of Desolation. In an island they touched at not greatly distant, the rocks were almost covered with the penguins and eggs; the first probably of this sort.

2. PINGUIN, BLACK-FOOTED, or *DIOMEDEA demissa*. See *DIOMEDEA*, N° 1.

3. PINGUIN, COLLARED, is a very little less than the papuan, being 18 inches long. The bill, which is black, is similar to that of the patagonian penguin; the irides are black; the eye is surrounded with a bare skin of a blood colour, of an oval shape, and three-times as large as the eye itself; the head, throat, hind part of the neck and sides, back, wings, and tail, are all black; the fore part of the neck, breast, belly, and thighs, are white, extending round the neck, where the white begins like a collar, except that it does not quite meet at the back part; the legs are black. This species inhabits New Guinea. It was also seen by Dr Forster near Kerguelen's Land; and again on two isles adjoining to the island of South Georgia.

4. PINGUIN, CRESTED, is a very beautiful species, 23 inches long; the bill is 3 inches long, and of a red colour, with a dark furrow running along on each side to the tip; the upper mandible is curved at the end, the under is obtuse; the irides are of a dull red; the head, neck, back, and sides are black. Over each eye there is a stripe of pale yellow feathers, which lengthens into a crest behind, nearly four inches long; the feathers on each side of the head, above this stripe, are longer than the rest, and stand upward, while those of the crest are decumbent, but can be erected on each side at pleasure; the wings, or rather fins, are black on the outside, edged with white; on the inside they are white; the breast and all the under parts are also white; the legs are orange, and the claws are dusky. The female has a streak of pale yellow over the eye, but it is not prolonged into a crest behind as in the male. This species inhabits Falkland Islands, and was likewise met with in Kerguelen's Land, or Isle of Desolation; as well as at Van Diemen's Land, and New Holland, particularly in Adventure Bay. They are called *hopping penguins* and *jumping jacks*, from their action of leaping quite out of the water, on meeting with the least obstacle, for 3 or 4 feet at least: and indeed they often do this, without any seeming cause, unless to advance. This species seems to have a greater air of liveliness in its countenance than others, yet it is in fact a very stupid bird, so much so as to suffer itself to be knocked on the head with a stick when on land. Forster says he found them difficult to kill; and when provoked, he adds, they ran at the sailors in flocks, and pecked their legs, and spoiled their clothes. When angered too, they erect their crests in a beautiful manner. These birds make their nests among those of the pelican tribes, living in tolerable harmony with them; and lay seldom more than one egg, which is white, and larger than that of a duck. They are mostly seen by themselves, seldom mixing with other penguins. They are often met with in great numbers on the outer shores, where they have been bred. They frequently suffer themselves to be taken by the hand. The females lay their eggs in burrows, which they easily form with their bills, throwing out the dirt with their feet. In these holes, the eggs are deposited on the bare earth. The time of sitting is in October; but

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Some

some of the species, especially in the colder parts, do not fit till December, or even January. How long they fit is not known.

5. PINGVIN, MAGELLANIC, is about the size of the antarctic penguin. They are about 2 feet and sometimes $2\frac{1}{2}$ feet long, and weigh 11 pounds. The bill is black, having a transverse band across near its tip; the head and neck are black, except a few markings here and there; the upper parts of the body and wings are of the same colour; the under parts of both are white from the breast, except a narrow band of black passing at a little distance within the white on the breast, and downwards on each side, beneath the wings quite to the thighs; the legs are of a reddish colour, irregularly spotted on the thighs; and the claws are black. This species, which is very numerous, inhabits the Straits of Magellan, Staten Land, Terra del Fuego, and Falkland Islands. Far from being timid, these birds will often attack a man and peck his legs. As food they are not at all unpalatable. They often mix with sea-wolves among the rushes, burrowing in holes like a fox. They swim with prodigious swiftness. They lay their eggs in collective bodies, resorting in incredible numbers to certain spots, which their long residence has freed from grass, and to which were given the name of *soums*.—Penrose observes, that they composed their nests of mud, a foot in height, and placed as near one another as may be. "The eggs (says he) are rather larger than those of a goose, and laid in pairs. When we took them once, and sometimes twice in a season, they were as often replaced by the birds; but prudence would not permit us to plunder too far, lest a supply in the next year's brood might be prevented." They lay some time in November, driving away the albatrosses, which have hatched their young in turn before them. The eggs were palatable food, and were preserved good for three or four months.

6. PINGVIN, PAPUAN, is about $2\frac{1}{2}$ feet long, being a little bigger than the *Cape Penguin*. This species inhabits the Isle of Papos, or New Guinea, and has been met with at Falkland Isles and Kerguelen's Land. It is often found among the Patagonian penguins.

7. PINGVIN, PATAGONIAN, is so named, not only because it is found on that coast, but also because it exceeds in bulk the common penguins as much as the people are said to do the common race of men. It was first discovered by Captain Macbride, who brought one of them from Falkland Islands, off the Straits of Magellan. The length of the stuffed skin of this bird measured 4 feet 3 inches, and the bulk of the body seemed to exceed that of a swan. The bill was $4\frac{1}{2}$ inches long, slender, straight, bending on the end of the upper mandible, with no nostrils. The tongue half the length of the bill, and singularly armed with strong sharp spikes pointing backwards. The plumage is most remarkable, the feathers lying over one another with the compactness of the scales of a fish, their texture equally extraordinary, the shafts broad and very thin, the vanes unwebbed; the head, throat, and hind part of the neck are of a deep brown colour; from each side of the head to the neck are two lines of bright

yellow, broad above, narrow beneath, and uniting half way down; from thence the same colour widens towards the breast, fading away till it is lost in pure white, of which colour is the whole under side of the body, a dusky line dividing it from the colour of the upper part. The whole back is of a very deep ash colour, almost dusky, but the end of each feather is marked with a blue spot, those about the junction of the wings larger and paler than the other. The wings are in this species, as in all the others, extremely short in respect to the size of the bird; hang down, and have the appearance of fins, whose office they perform; their length is only 14 inches; on the outside they are dusky, and covered with scale-like feathers, or at best, with such whose shafts are so broad and flat as scarce to be distinguished from scales; those on the ridge of the wings consisting entirely of shaft; the larger, or quill feathers, have some very short webs. The tail consists of 30 brown feathers, or rather thin shafts, resembling split whale-bone, flat on the upper side, concave on the under, and the webs short, unconnected, and bristly. From the knees to the end of the claws six inches, covered with strong pentangular black scales; the fore toe scarce an inch long, and the others so remarkably short, as to evince the necessity of that strength of the tail, which seems intended as a support to the bird in its erect attitude, in the same manner as that of the woodpecker is when it clings to the sides of trees. Between the toes is a strong semilunar membrane, continued up even part of the claws, the middle claw is near an inch long, and the inner edge very sharp and thin, the interior toe is small, and placed very high. The skin is extremely tough and thick; which, with the closeness of the feathers, guards it effectually in the water. This species, which was first met with in Falkland Islands, has since been seen in Kerguelen's Land, New Georgia, and New Guinea. M. Bougainville caught one, which soon became so tame as to follow and know the person who had care of it. It fed on flesh, fish, and bread, but after a time grew lean, pined away, and died. The chief food, when at large, is thought to be fish; the remains of which, as well as crabs, shell-fish, and molluscs, were found in the stomach. This species is the fattest of the tribe; and therefore most so in January when they moult. They are supposed to lay and sit in October. They are met with in the most deserted places. Their flesh is black, though not very unpalatable. This has been considered as a solitary species, but has now and then been met with in considerable flocks. They are found in the same places as the papuan penguins, and not unfrequently mixed with them; but in general show a disposition of associating with their own species.

8. PINGVIN, RED-FOOTED, or *phæton demersus*. See PHÆTON, § III. N° 2.

9. PINGVIN, SMALL, or, as Latham calls it, the *little penguin*, is about the size of a teal, being 15 inches long. The bill, which is of a dusky colour, is about $1\frac{1}{2}$ long, and shaped like that of the *phæton demersus*. The upper parts of the bird from the head to the tail appear to be of a cinereous blue colour, of which colour are the ends

of

of the feathers; the base of them, however, is brown black, and the shafts of each of the same colour, the under parts from chin to vent are white, the wings are dusky above and white beneath, the tail, which is exceedingly short, consists of 16 stiff feathers, which are scarcely perceptible, the legs are of a dull red colour, the webs are dusky, and the claws are black. This species is pretty common among the rocks on the south parts of New Zealand, but they are most frequent at Dusky Bay. They make deep burrows on the sides of the hills, in which they lay their eggs. These holes are so thick in some parts, that a person is scarcely able to walk 3 or 4 steps without falling into one of them up to the knees. The inhabitants of Queen Charlotte's Sound kill them with sticks, and, after skinning them, esteem the flesh as good food. At New Zealand they are named *korora*.—“These birds (says Latham) I have found to vary both in size and colour. Some are much smaller than others, quite black above, and measure only 13 inches in length; others are rather larger, and of a plain lead-colour on the upper parts, and the wings black, though all are white or nearly so beneath. The legs in these two last are marked with black at the ends of the toes, and the claws are black.”

PINGUIS, a river of Mysia, which runs into the Danube. *Plin.* iii. c. 26.

PING-YUEN, two towns of China: 1. Of the second rank in Koei-tcheou, 98 miles SSW. of Pekin: 2. Of the third rank, in Canton; 82 miles NW. of Tchao-tcheou.

PINHOLE. *n. f.* [*pin* and *hole*.] A small hole, such as is made by the perforation of a pin.—The break at first broke in a small *pinhole*. *Wifeman.*

(1.) **PINION**. *n. f.* [*pignon*, French.] 1. The joint of the wing remotest from the body. 2. *Shakespeare* seems to use it for a feather or quill of the wing.—

He is pluckt, when hither
He sends for poor a *pinion* of his wing. *Shak.*

3. Wing.—
How oft do they with golden *pinions* cleave
The sitting skies? *Spenser.*

The God, who mounts the winged winds,
Fast to his feet the golden *pinions* binds. *Pope.*
Though fear should lend him *pinions* like the
wind,

Yet swifter fate will seize him from behind. *Swift.*
4. The tooth of a smaller wheel, answering to that of a larger. 5. Fetters on bonds for the arms. *Ainsworth.*

(2.) **PINION**, in mechanics, an arbor or spindle, in the body whereof are several notches, which catch the teeth of a wheel that serves to turn it round, or it is a lesser wheel that plays in the teeth of a larger.

* **PINION**. *v. a.* [from the noun.] 1. To bind the wings.—They become sacrifices to the inconstancy of fortune, whose wings they thought by their self-wisdom to have *pinioned*. *Bacon.* 2. To confine by binding the wings; to maim by cutting off the first joint of the wing. 3. To bind the arm to the body.—

A second spear sent with equal force,
His right arm pierced, and holding on, bereft
His left of both, and *pinion'd* down his left. *Dryd.*

4. To confine by binding the elbows to the sides. Swarming at his back the country cried,
And seized and *pinioned* brought to court the knight. *Dryden.*

5. To shackle; to bind.—Know, that I will not wait *pinioned* at your master's court. *Shak. Ant. and Cleop.*—You must be *pinioned*. *Shak.*

That my free soul may use her wing,
Which now is *pinioned* with mortality. *Herbert.*
He's *pinioned* up by formal rules of state. *Norris.*

6. To bind to. This is not proper.—
While on fame's triumphant car they ride,
Some slave of mine be *pinioned* to their side. *Pope.*

(1.) * **PINK**. *n. f.* [*pince*, Fr. from *pink*, Dutch, an eye; whence the French word *ailet*; *caryophyllum*, Lat.] 1. A small fragrant flower of the gilliflower kind.—In May and June come *pinks* of all sorts; especially the bluish *pink*. *Bacon's Essays.* 2. An eye; commonly a small eye: as, *pink-eyed*.

Come, thou monarch of the vine,
Plumpy Bacchus, with *pink* eye. *Shak.*

3. Any thing supremely excellent. I know not whether from the flower or the eye, or a corruption of *pinnae*.—
I am the very *pink* of courtesy. *Shak.*

With patience wait, and be content to reign
The *pink* of puppies in some future strain. *Young.*

4. A colour used by painters.—*Pink* is very susceptible of the other colours by the mixture. *Dryden's Dufr.* 5. [*Pingue*, Fr.] A kind of heavy narrow-sterned ship.—

This *pink* is one of Cupid's carriers;
Give fire, she is my prize. *Shak. Merry Wives.*

6. A fish. The minnow. *Ainsworth.*
(2.) **PINK**, a name given to a ship with a very narrow stern; whence all vessels, however small, whose sterns are fashioned in this manner, are called *pink-sterned*.

(3.) **PINK**, in botany. See **DIANTHUS**.

(4—6.) **PINK**, INDIAN, the English name of three species of different genera; viz. **DIANTHUS**, No 3; **IPOMEA**, and **LONICERA**.

(7.) **PINK**, SEA, a species of **STATICE**.

(1.) * **To PINK**. *v. a.* [from *pink*, Dutch, an eye.] To work in eye-let holes; to pierce in small holes.—A haberdasher's wife of small wit railed upon me, till her *pinked* porringer fell off her head. *Shak. Henry VIII.*—The sea-hedgehog is inclosed in a round shell, handsomely wrought and *pinked*. *Carew's Survey of Cornwall.*

Happy the climate, where the beau
Wears the same suit for use and show;
And at a small expence your wife,
If once well *pinked*, is clothed for life. *Prior.*

(2.) * **To PINK**. *v. n.* [*pinchen*, Dutch; from the noun.] To wink with the eyes.—A hungry fox lay winking and *pinching*, as if he had sore eyes. *L'Estrange.*

PINKUSELT, a town of Hungary, 10 miles W. of Steinam Anger.

PINKZOW, a town of Poland, in Sandomirz; 52 miles west of Sandomirz.

PINLI, a town of China, in Chen-fu.

PIN-LON, a town of China, in Chang-fu, on the Hoang, 15 miles south-east of Kai.

* **PIN-MAKER**.

* **PIN-MAKER.** *n. f.* [*pin* and *maker*.] He who makes pins.

PIN-MAKING, *n. f.* See **PIN**, § 2.

* **PINMONEY.** *n. f.* [*pin* and *money*.] Money allowed to a wife for her private expences without account.—The woman must find out something else to mortgage, when her *pinmoney* is gone. *Addison*.

(I.) **PINNA**, in ancient geography, a town of Italy, south of Picenum, at the mouth of the *Matrinus*. *Sil.* 8. v. 518.

(II.) **PINNA**, in zoology, a genus belonging to the order of *vermes testacea*. See **MYTILUS**, N° 4. The animal is a slug. The shell is bivalve, fragile, and furnished with a beard, gapes at one end, the valves hinge without a tooth. They inhabit the coasts of Provence, Italy, and the Indian Ocean. See *Plate CCLXXXIV*.

PINNA MARINA, the largest and most remarkable species, inhabits the Mediterranean. It is blind, as are all of the genus; but furnished with very strong calcareous valves. The scuttle-fish (*scpia*), an inhabitant of the same sea, is a deadly foe to this animal. As soon as the pinna opens its shell, he rushes upon her like a lion, and would always devour her, but for another animal of the crab kind (see **CANCER**, N° 15.) naked like the hermit, and very quick-sighted. This cancer or crab the pinna receives into her covering; and when she opens her valves in quest of food, lets him out to look for prey. During this the scuttle-fish approaches, the crab returns with the utmost speed and anxiety to his hostess, who being thus warned of the danger, shuts her doors, and keeps out the enemy. Dr Hasselquist, in his voyage towards Palestine, beheld this curious phenomenon, which, though well known to the ancients, had escaped the moderns. Aristotle (*Hist.* lib. 5. c. 15.) and Pliny (lib. 9. 51. and 66.) confirm the facts above set forth. The pinnae marine differ less from muscles in the size of their shells than in the fineness and number of certain brown threads which attach them to the rocks, hold them in a fixed situation, secure them from the rolling of the waves, especially in tempests, and assist them in laying hold of slime. See **MYTILUS**, N° 4. These threads, M. de Reaumur says, are nearly as fine and beautiful as silk from the silk worm, and hence calls them the *silk-worms of the sea*. Stuffs, and several kinds of beautiful manufacture, are made of them at Palermo; in many places they are the chief object of fishing, and become a silk proper for many purposes. It requires a considerable number of the pinnae marine for one pair of stockings. This singular thread is so fine, that a pair of stockings made of it can be easily contained in a snuff-box of an ordinary size. Many manufacturers are employed in manufacturing these threads into various stuffs at Palermo and other places. The men who are employed in fishing up the pinna marina, say that it is necessary to break the tuft of threads. They are fished up at Toulon, from the depth of 15, 20, and sometimes more than 30 feet, with an instrument called a *cramp*. This is a kind of fork of iron, of which the prongs are perpendicular with respect to the handle. Each of them is about eight feet long, and there is a space between them of about six inches. The tuft of silk issues directly from the body of the animal; it comes

from the shell at the place where it opens, about four or five inches from the summit or point in the large pinnae. M. de Reaumur (*Mém. de l'Acad. des Sciences*, 1711, p. 216, and 1717, p. 177.) considers the pinna as the most proper of all shell-fish to elucidate the formation of pearls. It produces many of them of different colours, as grey or lead coloured, red, and some of a blackish colour, and in the form of a pear. The animal which lodges in the pinna marina rarely shows itself, because the valves are seldom opened. Its head is below, its largest extremity opposite; it is kept in the shell by four vigorous muscles, placed at the extremities of the valves; the shell has no hinges, but a flat and blackish ligament, which is equal in length to one-half of the shell. See **PINNOTERUS**, and **PEARL**. M. d'Argenville distinguishes three kinds of the pinnae:

1. **PINNA M. ASTURA** of the Venetians is large, red within, and has reddish mother-of-pearl, similar to the substance of the shell itself. Some of these shells weigh near 15 lb.

2. **PINNA M. PAPYRACEA**, is smaller, slender, papyraceous, of the colour of horn, a little shaded with pale red.

3. **PINNA M. PERNA**, is adorned with points in the channels of the shell, but what is singular, the edges of the shell are thicker at the openings than at the joining of the valves.

(1.) * **PINNACE.** *n. f.* [*pinna* and *Fr. pinacia*, Italian; *pinaga*, Span.] A boat belonging to a ship of war. It seems formerly to have signified rather a small sloop or bark attending a larger ship.—

Whilst our *pinnace* anchors in the downs,
Here shall they make their ransom on the sand.

—For fear of the Turks' great fleet, he came by night in a small *pinnace* to Rhodes. *Knolles's Hist.*
—He cut down wood, and made a *pinnace*. *Heylen.*
—I sent a *pinnace* or post of advice, to make a discovery of the coast. *Spelman.*—

Thus to ballast love,
I saw I had love's *pinnace* overfraught. *Donne.*
—I discharged a bark, taken by one of my *pinnaces*. *Raleigh's Apology.*—

A *pinnace* anchors in a craggy bay. *Milton.*
The winged *pinnace* shot along the sea. *Pope.*

(2.) A **PINNACE** is a small vessel navigated with oars and sails, and having generally two masts, which are rigged like those of a schooner.

(3.) **PINNACE** is also a boat usually rowed with eight oars. See **BOAT**.

(1.) * **PINNACLE.** *n. f.* [*pinna* and *Fr. pinna*, Lat.] 1. A turret or elevation above the rest of the building.—My letting some men go up to the *pinnacle* of the temple, was a temptation to them to cast me down headlong. *King Charles.*—He who desires only heaven, laughs at that enchantment which engages men to climb a tottering *pinnacle*, where the standing is uneasy, and the fall deadly. *Dreay of Piety.*—He took up ship-money where Noy left it, and, being a judge, carried it up to that *pinnacle* from whence he almost broke his neck. *Clarendon.*—

Some metropolis
With glitt'ring spires and *pinnacles* adorn'd. *Milt.*
2. A high spiring point.—

The guided *pinnacles* of fate. *Cowley.*
(2.) **PINNACLE**

2.) **PINNACLE**, in architecture, the top of an edifice, terminating in a point. This kind of roof among the ancients was appropriated to temples; in ordinary roofs were all flat, or made in the form of a dome.

3.) **PINNACLE**, in geography, a cape on the W. side of the Isle of Jersey; one mile S. of Grones.

4.) **PINNACLE ISLAND**, an island in the N. Pacific Ocean. Lon. 172. 30. W. Lat. 60. 25. N.

5.) **PINNACLES**, one of the FARN ISLANDS, in the most distant groupe, so called, from some vast umbrar rocks at the south end, even at their tops, flat at the tops, and entirely covered with lemots and shags. The fowlers pass from one to the other of these columns by means of a board, which they place from top to top, forming a narrow bridge over such a dreadful gap, that the very sight of it strikes one with horror.

PINNATED LEAVES, in botany. See **BOTANY**.

PINNATIFIDUM FOLIUM. See **BOTANY**, *Glossary*.

PINNATIPEDES, [Lat. from *pinna*, a fin, and *pes*, a foot.] in ornithology, an order of birds that

are *pinnated feet*, or are *fin-footed*. It is the 8th

order both in the Linnean system, and Mr L.

innæ's. (See **ORNITHOLOGY**, Sect. IV.); but the

arrangement according to Dr Gmelin's arrangement, which

is followed by Mr Kerr; who characterises them

as:—The bill, body, and mode of life, in the

order of this order, resemble those of the *Waders*.

The thighs are likewise naked for the lower half,

and the feet are fitted for wading in marshes, all

the toes being divided; but the toes are edged on

the side with a membrane for their whole length.

These birds mostly live in pairs, while breeding,

and construct very large nests of various leaves

and grass in their marshy haunts." See **GRALLÆ**,

and **WADERS**. There are only three genera, according

to all these ornithologists.

PINNATUM FOLIUM. See **BOTANY**, *Glossary*.

PINNÄW, a river of Germany, which runs into

the Elbe, 20 miles below Hamburg, in Holstein.

PINNE, a town of Poland, in Posen.

PINNEBERG, or **PINNENBURG**, a town of

Holstein, and capital of a county so named, which

is independent of Holstein. It is seated on the

river, 8 miles NW. of Holstein, 19 ESE. of Gluck-

stadt, and 15 NW. of Hamburg. Lon. 9. 40. E.

Lat. 53. 46. N.

1.) **PINNEL**, a river of Portugal, in Trallos-

montes, which runs into the Coha.

2.) **PINNEL**, a strong town of Portugal, in

the Azores, capital of a territory so named,

situated at the conflux of the Coha and Pinnel, 25

miles N. of Guarda. Lon. 6. 40. W. Lat. 40. 46. N.

PINNENBURG. See **PINNEBERG**.

* **PINNER**. *n. f.* [from *pinna*, or *pinion*.] 1.

A lappet of a head which flies loose.—

Set off with kerchief starch'd, and *pinners*

clean. *Gay*.

An antiquary will scorn to mention a *pinner* or

light-rail. *Addison on Ancient Medals*. 2. A *pinner*.

Ainsworth.

* **PINNOCK**. *n. f.* [from *pinna*.] The tom-tit. *Ainsworth*.

PINNOPHYLAX, } a kind of crab-fish, fur-

PINNOTERUS, or } nished with very good

PINNOTERUS, } eyes. It is said to be the

companion of the *pinna marina*. They live and

go together in the same shell, which belongs to

the latter. When it has occasion to eat, it opens its valves, and sends out its faithful purveyor to procure food. If during their labour the *pinnoterus* perceives the *polypus*, it immediately returns to warn its blind friend of the danger, when, by shutting its valves, it escapes the rage of its enemy; but when the *pinnoterus* loads itself with booty without molestation, it makes a gentle noise at the opening of the shell, and when admitted the two friends feast on the fruits of its industry. See **PINNA**, N° II.

PINNOW, a lake of Brandenburg, near Oranienburg.

PINOLA, or **PINGOLA**, a town of Mexico, in Guatemala, 75 miles E. of Guatemala.

(1.) **PINOS**, a town of Spain, in Grenada, 5 miles E. of Grenada.

(2.) **PINOS**, an island near the S. coast of Cuba, from which it is separated by a deep strait. It is 25 miles long, 15 broad, 25 in circumference, abounds with excellent pasture, and in its form resembles a horse shoe. It is mountainous, and covered with pines. Lon. 82. 33. W. Lat. 22. 2. N.

PINOSA, a town in the Isle of May.

PINQUENTE, a town of Maritime Austria, in Istria.

PINSK, or } a town of Russian Lithuania, in
PINSKO, } Brzeck, seated on a river so named, and surrounded by marshes. It was formerly a considerable town, but was much damaged by the Cossacks. It abounds with Jews and Greeks; the latter have a bishop. Its chief manufacture is Russian leather. It is 84 miles E. of Brzeck, and 100 SSE. of Grodno.

(1.) * **PINT**. *n. f.* [*int*. Sax. *pinte*, Fr. *pinta*; low Lat.] Half a quart; in medicine, twelve ounces; a liquid measure.—Well, you'll not believe me generous, till I crack half a *pint* with you at my own charges. *Dryden*.

(2.) **PINT**, [*pinta*] a vessel, or measure, used in estimating the quantity of liquids, and even sometimes of dry things.—*Budæus* derives the word from the Greek *πιντα*; others from the German *pint*, a little measure of wine; *Nicod* from the Greek *πινω*, to drink. The *English pint* is twofold; the one for wine measure, the other for beer and ale-measure. See **MEASURE**, § iii. and 4, ii. The Scots pint is 4 times as large.

PINTADA, a species of **PROCELLARIA**.

PINTARD'S SOUND, a large bay on the NW. coast of N. America, containing many islands, and extending from Point Disappointment to Cape Scott on the S. in Lon. 128. 57. W. Lat. 50. 56. N.

PINTCILUCO, a river of N. America, which joins the Chata-Uche, and falls into the Appalachicola.

PIN-TCIANG, a town of China, in Quan-si, of the 2d rank, 1212 miles SSW. of Peking. Lon. 123. 50. E. Ferro. Lat. 22. 9. N.

PINTIA, an ancient town of Spain, supposed to have been on the site of **VALLADOLID**.

PINTLES, certain pints or hooks fastened upon the back part of the rudder, with their points downwards, in order to enter into, and rest upon, *googings*, fixed in the stern-post, to hang the rudder. See **HELM**.

(1.) **PINTO**, a town of Spain, in New Castile, 9 miles S. of Madrid.

(2.) **PINTO**.

(2.) PINTO. See MENDEZ, N^o 4.

PINTOR, Peter, a native of Valentia in Spain, born in 1426; who was physician to Alexander VI. whom he followed to Rome, where he practised with great success. He wrote two works of considerable merit, 1. *Aggregator Sententiarum Doctorum de Curatione in Pestilentia*, printed at Rome 1499, in folio. 2. *De Morbo Fado & Occulto his Temporibus Affligenti*, &c. printed at Rome, 1500, in 4to, black letter; a book extremely scarce, unknown to Luifini and Afruc, and which traces the venereal disease to the year 1496. Pintor died at Rome in 1503, aged 83.

PINTURICCIO, Bernardin, a celebrated Italian painter, born at Perugia in 1454. He was the disciple of Peter Perugino, under whom he became so good an artist, that he employed him on many occasions as his assistant. He principally painted history and grotesque; but he also excelled in portraits, among which those of Pope Pius II. and Innocent VIII. of Julia Farnese, Cæsar Borgia, and Isabella Q. of Spain, are particularly distinguished. His chief performance is the history of Pius II. painted in ten compartments in the history of Siena; in which undertaking, Raphael, then a young man, assisted him so far as to sketch out cartoons of many parts of the composition. His death was occasioned by a singular disappointment. Being employed by the Franciscan monks of Siena, to draw a picture, they gave him a chamber to paint it, which they cleared of all furniture except an old trunk, which he insisted on being also removed, in doing so it broke and discovered 500 pieces of gold, which the monks gladly seized, and the painter died of vexation at missing the treasure.

• PINULES. *n. f.* In astronomy, the fights of an astrolabe. *Diſt.*

PINUS, the PINE-TREE; a genus of the monodelphia order, belonging to the monœcia class of plants; and, in the natural method, ranking under the 51st order, *Coniferae*. The pine-tree was well known to the ancients, and has been described and celebrated both by their philosophers and poets. Pliny enumerates six species of this genus; and it is mentioned by Virgil in his Eclogues, Georgics, and Æneid; by Horace in his Odes; by Ovid in his Metamorphoses; by Statius; and by Catullus, &c. There are generally reckoned 14 species of this genus. All of them are propagated by seeds produced in hard woody cones. The way to get the seeds out of these cones is to lay them before a gentle fire, which will cause the cells to open, and then the seeds may be easily taken out. If the cones are kept entire, the seeds will remain good for some years; so that the surest way of preserving them, is to let them remain in the cones till the time for sowing the seeds. If the cones are kept in a warm place in summer, they will open and emit the seeds; but if they are not exposed to the heat, they will remain close for a long time. The best season for sowing the pines is about the end of March. When the seeds are sown, the place should be covered with nets to keep off the birds; otherwise, when the plants begin to appear with the husk of the seed on the top of them, the birds will peck off the

tops, and thus destroy them. The most remarkable species are these:

1. PINUS ABIES, or *European spruce fir*, a native of the northern parts of Europe and of Asia, includes the Norway spruce and long-coned Cornish fir. The former of these is a tree of as much beauty when growing, as its timber is valuable when reared. Its growth is naturally upright; and the height it reaches renders it valuable: the white deal, so much coveted by the joiners, &c. is the wood of this tree; and from this fir *PITCH* is drawn. The leaves are dark green; they stand singly on the branches, but the younger shoots are very closely garnished with them. They are very narrow; their ends are pointed; and their beauties excite admiration. The cones are 8 or 10 inches long, and hang downwards. The better the soil is, the faster will the spruce fir grow, though it will thrive very well in moist lands. In strong loamy earth it makes a surprising progress; and it delights in fresh lands of all sorts, which never has been worn out by ploughing, &c. though it be never so poor. The long-coned Cornish fir differs scarcely in any respect from the Norway spruce, except that the leaves and the cones are larger.

2. PINUS BALSAMEA, the *hemlock fir*, a native of Virginia and Canada, possesses as little beauty as any of the fir tribe; though, being rather scarce, it is deemed valuable. It is called by some the *yew-leaved fir*, from the resemblance of the leaves to those of the yew tree. It is a tree of low growth, with but few branches; and these are long and slender, and spread abroad without order. The leaves do not garnish the branches so plentifully as those of any other species. The cones are very small and rounded; they are about half an inch long; and the scales are loosely arranged. We receive these cones from America, by which we raise the plants. This tree is fond of moist rich ground, and in such soil makes the greatest progress.

3. PINUS CANADENSIS, *American or Newfoundland spruce fir*, a native of Canada, Pennsylvania, and other parts of North America, includes three varieties. The *white*, the *red*, and the *black Newfoundland spruce*. These, however, differ very little. They are of an upright growth, though they do not shoot so freely or grow so fast with us as the Norway spruce. The leaves are of the same green, and garnish the branches in the same beautiful manner as those of that species; only they are narrower, shorter, and stand closer. The greatest difference is observable in the cones; for these are only about an inch long, and the scales are closely placed. In the cones, indeed, consists the chief difference of these 3 varieties; those of the white species are of a very light brown colour; those of the red more of a nut-brown or reddish colour; and those of the black species of a dark or blackish colour. This trifling variation, however, is pretty constant in the plants raised from the seeds. The sorts often flower, and produce cones when only about 5 or 6 feet high; and look then very beautiful; but this is a sign of weakness in the plant, which it does not often fairly get over.

4. PINUS

4. *PINUS CEDRUS*, ranked by Tournefort and others under *larix*, famous for its duration, is that popularly called by us the *cedar of Lebanon*, by the ancients *cedrus magna* or the *great cedar*: also *cedrelate*, *σιδηάκη*; and sometimes the Phœnician or Syrian cedar, from the country where it grows in its greatest perfection. It is a coniferous evergreen of the bigger sort, bearing large roundish cones of smooth scales, standing erect, the leaves being small, narrow, and thick set. They sometimes counterfeit cedar, by dying wood of a reddish hue; but the smell discovers the cheat, that of true cedar being very aromatic. In some places, the wood of the cajou-tree passes under the name of cedar, on account of its reddish colour and its aromatic smell, which somewhat resemble that of santal. Cedar wood is reputed almost immortal and incorruptible; a prerogative which it owes chiefly to its bitter taste, which the worms cannot endure. For this reason it was that the ancients used cedar tablets to write upon, especially for things of importance, as appears from that expression of Persius, *Et cedro digna locutus*. A juice was also drawn from cedar, with which they smeared their books and writings, or other matters, to preserve them from rotting; which is alluded to by Horace: by means of which it was that Numa's books, written on papyrus, were preserved entire to the year 535, as we are informed by Pliny. Solomon's temple, as well as his palace, were both of this wood. That prince gave king Hiram several cities for the cedars he had furnished him on these occasions. Cortes is said to have erected a palace at Mexico, in which were 7000 beams of cedar, most of them 120 feet long, and 12 in circumference, as we are informed by Herrera. Some tell us of a cedar felled in Cyprus 130 feet long, and 18 in diameter. It was used for the main-mast in the galley of king Demetrius. Le Bruyn assures us, that the two biggest he saw on mount Lebanon, measured, one of them 57 palms, and the other 47, in circumference. In the temple of Apollo at Utica, there are cedar trees near 1000 years old: which yet are nothing to that beam in an oratory of Diana at Seguntum in Spain, said to have been brought thither 200 years before the destruction of Troy. Cedar is of so dry a nature, that it will not endure to be fastened with iron nails, from which it usually shrinks; so that they commonly fasten it with pins of the same wood. Hanbury says, the wood is not obnoxious to worms; that its oil preserves cloth and books from corruption, and that the saw-dust will even preserve the human body from it. (See *CEDAR*, § 1.) This tree is not found native in any other part of the world but mount Libanus, as far as hath yet been discovered. What we find mentioned in Scripture of the lofty cedars can be nowise applicable to the common growth of this tree; since, from the experience we have of those now growing in England, as also from the testimony of several travellers who have visited those few remaining trees on mount Libanus, they are not inclined to grow very lofty; but on the contrary extend their branches very far; to which the allusion made by the Psalmist agrees very well, when he is describing the flourishing state of a peo-

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ple, and says, "They shall spread their branches like the cedar-tree."

5. *PINUS LARIX*, the *larch-tree*, which the old botanists ranked under *larix*, with deciduous leaves and oval obtuse cones. It grows naturally upon the Alps and Apennines, and of late has been very much propagated in Britain. It is of quick growth, and the trunk rises to 50 feet or more; the branches are slender, their ends generally hanging downward, and are garnished with long narrow leaves which arise in clusters from one point, spreading open above like the hairs of a painter's brush; they are of a light green, and fall away in autumn. In April the male flowers appear, which are disposed in form of small cones; the female flowers are collected into oval obtuse cones, which in some species have bright purple tops, and in others they are white; these differences are accidental; the cones are about an inch long, obtuse at their points; the scales are smooth, and lie over each other: under each scale there are generally lodged two seeds, which have wings. There are other two varieties of this tree, one of which is a native of America, and the other of Siberia. The cones of the American kind which have been brought to Britain are in general larger than those of the common sort. In Switzerland their houses are covered with boards of this wood cut out a foot square; and, as it emits a resinous substance, it so diffuses itself into every joint and crevice, and becomes so compact and close, as well as so hardened by the air, as to render the covering proof against all weather. But as such covering for houses would cause great devastation in case of fire, the buildings are confined to a limited distance. The wood, when first laid on the houses, is said to be very white; but this colour, in two or three years is changed, by means of the sun and resin, to a black, which appears like a smooth shining varnish." Of the common larch there are several varieties. The flowers which it exhibits early in spring are of a delicate red colour; another sort produces white flowers at the same season, and these have a delightful effect among those of the red sort; whilst another, called the *Black Newfoundland larix*, increases the variety, though by an aspect little differing from the others. There are also larches with greenish flowers, pale red, &c. all of which are accidental varieties from seeds. These varieties are easily distinguished, even when out of blow: the young shoots of the white flowering larch are of the lightest green, and the cones when ripe are nearly white. The red flowering larch has its shoots of a reddish cast, and the cones are of a brown colour; whilst the cones and shoots of the black Newfoundland larch are in the same manner proportionally tinged. Their chief beauty consists in the manner of their growth, the nature and beauty of their pencilled leaves and fair flowers; for the cones that succeed them are small, of a whitish, a reddish, or a blackish brown colour, and make no figure. The *pinus cedrus* and *pinus larix* are propagated by sowing in March, on a bed of light earth exposed to the morning sun. The seed must be covered half an inch thick with fine light earth, and the beds watered at times when the weather is dry. In about six weeks the plants

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plants will appear; they must at this time be carefully guarded from the birds, shaded from the sun and winds, and kept very clear of weeds. In the latter end of April following, they may be removed into beds of fresh earth, placing them at ten inches distance every way. They are to be kept here two years, and such of them as seem to bend must be tied up to a stake to keep them upright. They may afterwards be planted in the places where they are to remain. They thrive well on the sides of barren hills, and make a very pretty figure there. Dr Pallas, in his *Flora Rossica*, informs us, that if this tree is burnt, and the wood confined, the internal part of the wood distils copiously a drying reddish gum, a little less glutinous than gum arabic, somewhat of a resinous taste, but wholly soluble in water. At the infighting of M. Kunder, this gum has lately been sold in the Russian shops under the name of *gummi Oranburgeris*, but which our author thinks should be called *gummi uraliense laricina*. It is eat by the Woguli as a dainty, and is said to be nutritious and antiscorbutic. Some manna was gathered from the green leaves, but it could never be condensed. The Russians use the *boletus laricinus* as an emetic in intermittents, and to check the leucorrhœa. At Bafchir and Siberia the inhabitants sprinkle the dry powder on the wounds of oxen and horses, as a detergent and antihelmintic. The nuts of the *pinus cembra*, the same author asserts, are eat as luxuries in Russia, and are even exported with the same view. The unripe cones give a very fragrant oil, termed balsamic. The inhabitants of Siberia use the tender tops, and even the bark rubbed off in the spring, as an antiscorbutic. The kernels of the nuts of the *amygdalus nana* give a very pleasing flavour to brandy; and, when pressed, afford a bitter oil in large quantities. The way of destroying the bitter is by digesting it in the sun with spirit of wine, and it then becomes sweet and extremely agreeable. From the larch-tree is extracted what we erroneously call *Venice turpentine*. This natural balsam flows at first without incision; when it has done dropping, the people make incisions at about 2 or 3 feet from the ground into the trunks of the trees, into which they fix narrow troughs about 20 inches long. The end of these troughs is hollowed like a ladle; and in the middle is a small hole bored for the turpentine to run into the receiver which is placed below it. As the gummy substance runs from the trees, it passes along the sloping gutter or trough to the ladle, and thence runs through the holes into the receiver. The people who gather it visit the trees morning and evening from the end of May to September, to collect the turpentine out of the receivers. When it flows out of the tree, Venice turpentine is clear like water, and of a yellowish white; but, as it grows older, it thickens and becomes of a citron colour. It is procured in the greatest abundance near Lyons, and in the valley of St Martin near St Lucern in Switzerland.

6. *PINUS ORIENTALIS*, the *oriental fir*, a native of the East, is a low but elegant tree. The leaves are very short, and nearly square. The fruit is exceeding small, and hangs downward; and the whole tree makes an agreeable variety with the other kinds.

7. *PINUS PICEA*, or *yew-leaved fir*, is a tall evergreen, and a native of Scotland, Sweden, and Germany. This species includes the *silver fir* and the *balm of Gilead fir*. The first of these is a noble upright tree. Mr Marshall says, "The tallest trees I have seen were spruce and silver firs in the valleys in Switzerland. I saw several firs in the dockyards in Venice 40 yards long; and one of 39 yards was 18 inches diameter at the small end. It was told they came from Switzerland." The branches are not very numerous, and the bark is smooth and delicate. The leaves grow singly on the branches, and their ends are slightly indented. Their upper surface is of a fine strong green colour, and their under has an ornament of two white lines running lengthwise on each side the midrib; on account of which silvery look this sort is called the *SILVER FIR*. The cones are large, and grow erect; and when the warm weather comes on, they soon shed their seeds. All who wish to raise this plant should therefore gather the cones before that happens. The *Balm of Gilead fir* has of all the sorts been most coveted, on account of the great fragrance of its leaves: though this is not its only good property: for it is a very beautiful tree, naturally of an upright growth, and the branches are so ornamented with their balmy leaves, as to exceed any of the other sorts in beauty. The leaves, which are very closely set on the branches, are broad; and their ends are indented. Their upper surface, when healthy, is of a fine dark-green colour, and their under has white lines on each side the midrib lengthwise, nearly like those of the silver fir. These leaves when bruised are very finely scented; and the buds, which swell in the autumn for the next year's shoot, are very ornamental all winter, being turgid, and of a fine brown colour: and from these also exudes a kind of fine turpentine, of the same kind of (though heightened) fragrantcy. The tree being wounded in any part, emits plenty of this turpentine; and Hanbury says, "it is supposed by many to be the sort from whence the balm of Gilead is taken, which occasions this tree being so called. But this is a mistake; for the true balm of Gilead is taken from a kind of *TEREBINTHUS*: though I am informed, that what has been collected from this tree has been sent over to England from America (where it grows naturally), and often sold in the shops for the true sort." The *silver fir* is very hardy, and will grow in any soil or situation, but always makes the greatest progress in rich loamy earth. The balm of Gilead fir must be planted in deep, rich, good earth; nor will it live long in any other. The soil may be a black mould, or of a sandy nature, if it be deep enough, and if the roots have room enough to strike freely.

8. *PINUS PINEA*, or *stone pine*, is a tall evergreen tree, native of Italy and Spain. It delights in a sandy loam, though like most others it will grow well in almost any land. Respecting the uses of this species, Hanbury tells us that "the kernels are eatable, and by many preferred to almonds. In Italy they are served up at the table in their shells.—They are exceeding wholesome, being good for coughs, colds, consumptions, &c. on which account only this tree deserves to be propagated."

propagated." Hanbury observes, "it is a great mistake Mr Miller has committed, by saying that seeds kept in the cones will be good and grow if they are sown 10 or 12 years after the cones have been gathered from the trees; whereas the seeds of this sort, whether kept in the cones or taken out, are never good after the first year."

9. *PINUS PINEASTER*, or wild pine, grows naturally in the mountains in Italy and the S. of France. It grows to the size of a large tree; the branches extend to a considerable distance; and while the trees are young, they are fully garnished with leaves, especially where they are not so close as to exclude the air from those within; but as they advance in age, the branches appear naked, and all those which are situated below become unightly in a few years; for which reason they are now much less in esteem than formerly. From this species is extracted the common *TURPENTINE*, much used by farriers, and from which is drawn the oil of that name. The process of making pitch, tar, resin, and turpentine, from these trees is very familiar. In spring when the sap is most free in running, they pare off the bark of the pine tree, to make the sap run down into a hole which they cut at the bottom to receive it. In the way, as it runs down, it leaves a white matter like cream, but a little thicker. This is very different from all the kinds of resin and turpentine in use, and it is generally sold to be used in the making of flambeaux instead of white bees wax. The matter that is received in the hole at the bottom is taken up with ladles, and put in a large basket. A great part of this immediately runs through, and this is the common turpentine. This is received into stone and earthen pots, and is ready for sale. The thicker matter, which remains in the basket, they put into a common almbic, adding a large quantity of water. They distill this as long as any oil is seen swimming upon the water. This oil they separate from the surface in large quantities, and this is the common oil or spirit of turpentine. The remaining matter at the bottom of the still is common yellow resin. When they have thus obtained all that they can from the sap of the tree, they cut it down, and, hewing the wood into billets, they fill a pit dug in the earth with these billets, and, setting them on fire, there runs from them, while they are burning, a black thick matter. This naturally falls to the bottom of the pit, and this is the *TAR*. The top of the pit is covered with tiles, to keep in the heat; and there is at the bottom a little hole, out at which the tar runs like oil. If this hole be made too large, it sets the whole quantity of the tar on fire; but, if small enough, it runs quietly out. The tar, being thus made, is put in barrels; and if it be to be made into pitch, they put it into large boiling vessels, without adding any thing to it. It is then suffered to boil a while, and being then let out, is found when cold to be what we call pitch. A decoction of the nuts or seeds of this species in milk, or of the extremities of the branches pulled in spring, is said, with a proper regimen, to cure the most inveterate scurvy. The wood of this species is not valued.

10. *PINUS RUBRA*, the *Scots fir* or *pine*. It is

common throughout Scotland, whence its name; though it is also found in most of the other countries of Europe. M. Du Hamel, of the Royal Academy of Sciences, mentions his having received some seeds of it from St Domingo, and thence concludes, that it grows indifferently in the temperate, frigid, and torrid zones. The wood is the red or yellow deal, which is the most durable of any of the kinds yet known. The leaves are much shorter and broader than those of the *PINEA*, (N^o 8.) of a greyish colour, growing two out of one sheath; the cones are small, pyramidal, and end in narrow points; they are of a light colour, and the seeds are small. The wood of the Scots pine is superior to that of any other species. When planted in bogs, or in a moist soil, though the plants make great progress, yet the wood is white, soft, and little esteemed; but when planted in a dry soil, though the growth of the trees is there very slow, yet the wood is proportionably better. Few trees have been applied to more uses than this. The tallest and straightest are formed by nature for masts to our navy. The timber is resinous, durable, and applicable to numberless domestic purposes, such as flooring and wainscoting of rooms, making of beds, chests, tables, boxes, &c. From the trunk and branches of this, as well as most others of the pine tribe tar and pitch is obtained. By incision, *barra*, *BURGUNDY PITCH*, and *TURPENTINE*, are acquired and prepared. The resinous roots are dug out of the ground in many parts of the Highlands, and, being divided into small splinters, are used by the inhabitants to burn instead of candles.—At *Loch-Broom*, in *Ross-shire*, the fishermen make ropes of the inner bark; but hard necessity has taught the inhabitants of *Sweden*, *Lapland*, and *Kamtschatka*, to convert the same into bread. To effect this, they, in the spring season, make choice of the tallest and fairest trees; then stripping off carefully the outer bark, they collect the soft, white, succulent interior bark, and dry it in the shade. When they have occasion to use it, they first toast it at the fire, then grind, and after sieving the flour in warm water to take off the resinous taste, they make it into thin cakes, which are baked for use. On this strange food the poor inhabitants are sometimes constrained to live for a whole year; and, we are told, through custom, become at last even fond of it. *Linnaeus* remarks, that this same bark bread will fatten swine; and humanity obliges us to wish, that men might never be reduced to the necessity of robbing them of such a food. The interior bark of which the above mentioned bread is made, the *Swedish* boys frequently peel off the trees in the spring, and eat raw with greedy appetite. From the cones of this tree is prepared a diuretic oil, like the oil of turpentine, and a resinous extract, which has similar virtues with the balm of Peru. An infusion or tea of the buds is highly commended as an antiscorbutic. The farina, or fellow powder, of the male flowers, is sometimes in the spring carried away by the winds, in such quantities, where the trees abound, as to alarm the ignorant with the notion of its raining brimstone. The tree lives to a great age; *Linnaeus* affirms to 400 years.

11. *PINUS STROBUS*, *Lord Weymouth's pine*, or
Cccca North

North American white pine. This grows sometimes to the height of 100 feet and upwards, and is highly valued on account of its beauty. The bark of the tree is very smooth and delicate, especially when young; the leaves are long and slender, five growing out of one sheath; the branches are pretty closely garnished with them, and make a fine appearance. The cones are long, slender, and very loose, opening with the first warmth of the spring; so that if they are not gathered in winter, the scales open and let out the seeds. The wood of this sort is esteemed for making masts for ships. In Queen Anne's time there was a law made for the preservation of these trees, and for the encouragement of their growth in America. Within these last 50 years they have been propagated in Britain in considerable plenty. The best soil for this species is a sandy loam, but inferior soils will answer.

12. **PINUS T.EDA**, the *swamp pine*, is a tall evergreen tree, a native of the swamps of Virginia and Canada. There are several varieties of this genus which Hanbury enumerates and describes: such as, 1st, *The three-leaved American swamp-pine*. 2d, *The two-leaved American pine*. 3d, *The yellow American pine, the yellow tough pine, and the tough pine of the plains*; among which there is but little variety. 4th, *The bastard pine*. 5th, *The frankincense pine*. And, 6th, *The dwarf pine*.

(1.) **PIN-YANG**, a city of China, of the first rank, in Chanfi; 537 miles SW. of Pekin. Lon. 128. 46. E. Ferro. Lat. 36. 6. N.

(2.) **PIN-YANG**, a town of China, in Tche-kiang, of the 3d rank; 20 miles S. of Ouen-tcheou.

PIN-YAO, a town of China, in Chan-fi.

PIN-YUEN, a town of China, in Chan-tong.

PIOLEN, a town of France, in the dep. of the Drome, and ci-devant county of Venaissin; 3 miles NW. of Orange, and 21 S. of Montelimart.

(1.) **PIOMBINO**, a small principality of Tuscany or Etruria, on a gulf so named. (See N° 3.) The island of ELBA depends upon it.

(2.) **PIOMBINO**, a sea port town of Etruria, built on the ruins of the ancient POPULONIUM, capital of the above principality; seated on a peninsula and defended by a citadel; 33 miles SW. of Sienna, 40 S. of Leghorn, and 27 SSW. of Florence, or 60 according to Brookes. Lon. 10. 23. E. Lat. 42. 57. N.

(3.) **PIOMBINO, GULF OF**, a bay of the Mediterranean, on the coast of Etruria.

PION, a descendant of Hercules, who built **PIONIA**. *Pauf. ix. c. 18.*

(1.) * **PIONEER**. *n. f.* [*pionier*, from *pion*, obsolete, Fr. *pion*, according to Scaliger, comes from *pes* for *pedito*, a foot soldier, who was formerly employed in digging for the army. A *pioneer* is in Dutch, *spagener*, from *spage*, a spade; whence *Jurins* imagine that the French borrowed *page-nier*, which was afterwards called *pioneer*.] One whose business is to level the road, throw up works, or sink mines in military operations.—

Well said, old mole, can't work i' th' ground so fast?

A worthy pioneer! *Shak. Hamlet.*
—These we call pioneers or miners. *Bacon.*—

His pioneers
Even the paths.

Fairfax.

Of labouring pioneers

A multitude with spades and axes arm'd,
To lay hills plain.

Milton.

—The Romans, after the death of Tiberius, sent thither an army of pioneers to demolish the buildings. *Addison.*

(2.) **PIONEERS**, in the art of war, are such as are commanded in from the country, to march with an army for the above purposes. The soldiers are likewise employed in all these services. Most of the foreign regiments of artillery have half a company of pioneers, well instructed in that important branch of duty. Our regiments of infantry and cavalry have 3 or 4 pioneers each, provided with aprons, hatchets, saws, spades, pick-axes, &c.

PIONIA, a town of Mysia, in Caycus.

* **PIONING**. *n. f.* Works of pioneers. *Spenser.*

PIONNAS, a town of France, in the dep. of the Creuse, 6 miles E. of Gueret.

PIONSAT, a town of France, in the dep. of Puy de Dome; 7½ miles SW. of Montaigu, and 23 NW. of Riom.

(1.) * **PIONY**. *n. f.* [*paonia*, Latin.] A large flower. See **PEONY**.

(2.) **PIONY**. See **PRONIA**, N° 2.

(1.) **PIORIAS**, a nation of N. American Indians, in the North-Western Territory, who inhabit the country near the Illinois. They have 150 warriors.

(2.) **PIORIAS**, another tribe of N. American Indians, who inhabit a village on the Mississippi, a mile above Fort Chartres; and have about 100 warriors.

(3.) **PIORIAS**, a fort and village, in the North-Western Territory, on the W. bank of the Illinois, and S. end of Lake Illinois.

(4.) **PIORIAS**, or the *Wintering ground*, a tract of land in the North-Western Territory, on the S. bank of the Illinois; 27 miles below the Isle of Pierre.

PIOSSASCO, a town of the imperial French republic, in the dep. of the Po, and ci-devant Piedmontese, 7 miles N. of Pignerolo, and 10 WSW. of Turin.

(1.) **PIOVE**, or **PIOVE DE SACCO**, a district in the ci-devant Venetian territories, near the Dogado; containing 1 town, 44 villages, and 38,400 souls, in 1797.

(2.) **PIOVE**, the capital of the above district, contained 5100 inhabitants, in 1797.

* **PIOUS**. *adj.* [*pious*, Latin; *pieux*, French.] 1. Careful of the duties owed by created beings to God; godly; religious; such as is due to sacred things.—

Pious awe that fear'd to have offended. *Milt.*
Temper joy with fear

And *pious* sorrow.

Milton.

2. Careful of the duties of near relation.—He is not called a just father, that educates his children well, but *pious*. *Taylor's Rule.*—

Where was the martial brother's *pious* care?

Pope.

3. Practised under the appearance of religion.—At whom *pious* frauds have seduced. *K. Charles.*
* **PIOUSLY**.

* **PIOUSLY.** *adv.* [from *pious*.] In a pious manner; religiously; with such regard as is due to sacred things.—Set industriously and *piouſly* to the performance of that condition on which the promise is made. *Hammond*.—

See lion-hearted Richard, with his force
Drawn from the North, to Jury's shallow'd plains;
Piously valiant. *Philips*.

This martial present *piouſly* deſign'd,
The loyal city give their beſt lov'd king. *Dryd*.

Let freedom never periſh in your hands!
But *piouſly* transmit it to your children. *Cato*.
(1.) * **PIP.** *n. ſ.* [*pippe*, Dutch; *pepie*, French; deduced by Skinner from *pituita*; but probably coming from *pipio* or *pipilo*, on account of the complaining cry.] 1. A deſluxion with which fowls are troubled; a horny pellicle that grows on the tip of their tongues.—

When murrain reigns in hogs or ſheep,
And chickens languish of the *pip*. *Hudibras*.
—A ſpiteful vexatious gipſy died of the *pip*. *L'Eſtrange*. 2. !A ſpot on the cards. I know not from what original, unleſs from *piſt* painting; in the country, the pictured or court cards are called *piſts*.—When our women fill their imaginations with *pips* and counters, I cannot wonder at a new-born child, that was marked with the five of clubs. *Addiſon*.

(2.) **PIP**, or **PEP**, (§ 1. *def.* 1.) a diſeaſe among poultry, conſiſting of a white thin ſkin, or film, that grows under the tip of the tongue, and hinders their feeding. It uſually ariſes from want of water, or from the drinking puddle-water, or eating filthy meat. It is cured by pulling off the film with the fingers, and rubbing the tongue with ſalt. Hawks are particularly liable to this diſeaſe, eſpecially from feeding on ſtinking fleſh.

* **To PIP.** *v. a.* [*pipio*, Lat.] To chirp or cry as a bird.—It is no unſrequent thing to hear the chick *pip* and cry in the egg, before the ſhell be broken. *Boyle*.

PIPA, in law. See **PIPE**, § 3.

(1.) * **PIPE.** *n. ſ.* [*piſb*, Welch; *pipe*, Sax.] 1. Any long hollow body; a tube.—

When we've ſtuff'd

Theſe *pipes* and theſe conveyances of blood
With wine and feeding, we have ſupplier ſouls. *Shak*.

—The part of the pipe which was loweſtmoſt, will become higher. *Wilkins*.—It has many ſprings, and vaſt quantities of wood to make *pipes* of. *Addiſon*.—The nearer it is to its original, the more *pipe* it hath. *Arbutnot*. 2. A tube of clay thro' which the ſmoke of tobacco is drawn into the mouth.—Try the taking of ſmokes by *pipes*, as in tobacco and other things, to dry and comfort. *Bacon*.—

His ancient *pipe* in ſable dy'd,
And half unſmok'd lay by his ſide. *Swift*.

My huſband's a ſot,
With his *pipe* and his pot. *Swift*.

3. An inſtrument of wind muſic.—Now had he rather hear the taber and the *pipe*. *Shak*.—

The ſolemn *pipe* and dulcimer. *Milton*.
Then the ſhrill ſound of a ſmall rural *pipe*

Was entertainment for the infant ſtage. *Roſcom*.

—There is no reaſon why the ſound of a *pipe* ſhould leave traces in their brains. *Locke*. 4. The

organs of voice and reſpiration; as, the wind-*pipe*. —The exerciſe of ſinging openeth the breaſt and *pipes*. *Percbam*. 5. The key or ſound of the voice.—

My throat of war be turn'd,

Which quired with my drum, into a *pipe*
Small as an eunuch. *Shak*.

6. An office of the exchequer.—That office of her majeſty's exchequer we, by a metaphor, call the *pipe*, becauſe the whole receipt is finally conveyed into it by the means of divers ſmall *pipes* or quills, as water into a ciſtern. *Bacon*. 7. *Peep*, Dutch; *pipe*, Fr.] A liquid meaſure containing two hogſheads.—I think I ſhall drink in *pipe* wine with Falſtaff; I'll make him dance. *Shak*.

(2.) **PIPE**, in building, &c. a canal, or conduit, for the conveyance of water and other liquids. Pipes for water, water-engines, &c. are uſually of lead, iron, earth, or wood: the latter are uſually made of oak or elder. Thoſe of iron are caſt in forges; their uſual length is about 2½ feet: ſeveral of theſe are commonly faſtened together by means of four ſcrews at each end, with leather or old hat between them, to ſtop the water. Thoſe of earth are made by the potters; theſe are fitted into one another, one end being always made wider than the other. To join them the cloſer, and prevent them breaking, they are covered with tow and pitch; their length is uſually that of the iron pipes. The wooden pipes are trees bored with large iron augers, of different ſizes, beginning with a leſs, and then proceeding with a larger ſucceſſively; the firſt being pointed, the reſt being formed like ſpoons, increaſing in diameter, from one to fix inches, or more: they are fitted into the extremities of each other, and are ſold by the foot. For the conſtruction of leaden pipes, ſee **PLUMBERY**.

(3.) **PIPE**, **PIPA**, in law, is a roll in the exchequer, called alſo the *great roll*. See § 10.

(4.) **PIPE**, in mining, is where the ore runs forwards endwiſe in a hole, and doth not ſink downwards or in a vein.

(5.) **PIPE**, (§ 1. *def.* 7.) See **BARREL** and **MEASURE**.

(6.) **PIPE**, **AIR**. See **AIR-PIPES**.

(7.) **PIPE**, **BAG**. See **BAG-PIPES**, § 1—5.

(8.) **PIPE**, **CLERK** OF THE. See **CLERK**, § 23.

(9.) **PIPE** **FISH**. See **SYNGNATHUS**.

(10.) **PIPE**, **HORN**. See **HORN-PIPE**.

(11.) **PIPE OFFICE** is an office wherein the officer called the *clerk of the pipe*, makes out leafes of crown lands, by warrant from the lord treaſurer, or commiſſioners of the treaſury, or chancellor of the exchequer. (See **CLERK**, § 23.) To this office are brought all accounts which paſs the remembrancer's office, and remain there. All tallies which vouch the payment of any ſum contained in ſuch accounts, are examined and allowed by the chief ſecondary of the pipe. Beſides the chief clerk in this office, their are eight attorneys or ſworn clerks, and a comptroller.

(12.) **PIPES** OF AN ORGAN. See **ORGAN**, § 7.

(13.) **PIPES**, **SEA**, in zoology, are univalve ſhells, of an oblong figure, terminating in a point, ſometimes a little bending, and ſometimes ſtraight. Sea ears, figures of which we have given along with ſea-pipes, are alſo univalve flat ſhells, reſembling

bling in shape the ear of a man. In sea ears it is not uncommon to find small pearls, the seeds of which are often found in the middle of their cavities, which are of the finest naker or mother-of-pearl colour. There are 'ridges on both sides; those without form a kind of volute or spire, terminating in an eye. In these shells there is a row of round holes, six of which generally go quite through. There is a shell of this kind, which is longer in proportion to its width, and much less common, for it is never found in our seas. There is another, very fine and thin, of a dirty grey colour, neither naked nor perforated as the others are; the inner rim is spiral, and at some distance from the outer. The sea pipes are distinguished from sea worms by having their pipes single; whereas the others form an assemblage of pipes joined together. The sea worms, from the number and junction of their parts, are multivalves. The shells of pipes called *dentales* and *antales*, are distinguished from each other only by their size, the *antales* being much the least. The *sea-pencil* or *watering-spout*, is the most remarkable shell of this tribe, and must be considered as having a specific character, either by its form, which is straight, or the singularity of its superior extremity, which is perforated like the spout of a watering pot. In Plate CCLXXIV. the shell, *fig. 1.* pierced with many holes, is found with its natural covering in our seas. It is finely naked within, and in the middle of its hollow or cavity contains many small pearls. *Fig. 2.* is placed on its upper side to show its spots, which are red upon a ground of the purest white; the ridges are prominent; the rim and the eye are irregular and notched. *Fig. 4.* the singularity of this shell consists in its being neither naked nor perforated, and in turning very much up near the eye of its spire or contour. *Fig. 5.* is a pencil or watering spout; at the head is a kind of ruff, and within it is formed like the end of a watering spout, perforated with many holes, which, when the fish is alive, are filled with very fine threads, like the hairs of a painter's pencil. *Fig. 6.* are called *dentals* from their resemblance of elephants teeth; the point or apex is white, and the other extremity green. They are both ribbed and naked, and are distinguished from each other only by some excrescences which appear on the uppermost. *Fig. 7.* are two small shells of the dental figure, called for distinction, *antales*. They are perfectly smooth; one is white, and the other reddish.

(14.) PIPE, TOBACCO. See TOBACCO PIPE.

* To PIPE. *v. n.* [from the noun.] 1. To play on the pipe.—Merry Michael the Cornish poet piped thus upon his oaten pipe for merry England. *Camden*.—We have piped to you, and you have not danced. *Mattb.*—

In singing, as in piping, you excel. *Dryden*.

Lowing herds, and piping swains,

Come dancing to me.

Swift.

2. To have a shrill found.—

His big manly voice,

Turning again toward childish treble, pipes

And whistles in his found.

Shak.

(1.) * PIPER. *n. f.* [from *pipe*.] One who plays on the pipe.—Pipers and trumpeters shall be heard no more in thee. *Revelation*.

(II.) PIPER, Francis LE, an eminent English painter, the son of a gentleman in Kent, descended from a Walloon family. His father gave him a liberal education, but his genius led him to painting, in which he had a peculiar talent, for he needed but to see a face once, whereby he would paint as exact a likeness as if the person had sat often for it. He also painted landscapes well; but he delighted in painting faces peculiarly striking or ugly. He likewise modelled figures in wax to the life. In his travels he was equally whimsical. He often set out on a tour through France, the Netherlands, Germany, and even Egypt, without taking leave of his friends, or warning them of his return. He died at Aldermanbury in 1740, in consequence of his surgeon pricking an artery when bleeding him.

(III.) PIPER, in ichthyology. See TRIGLA, N° 4.

(IV.) PIPER, in botany, PEPPER; a genus of the trygynia order, belonging to the diandria class of plants; and ranking, in the natural method, under the 1d order *Piperite*. There are 20 species; the most remarkable are these:

1. PIPER AMALAGO, or black pepper, and the PIPER INEQUALE, with some other species, are indigenous, and named *joint wood*, or *peppery elders*. The first bears a small spike, on which are attached a number of small seeds of the size of mustard. The whole plant has the exact taste of the East India black pepper.

2. PIPER BETELUM, the BETEL, or *Betle*, is a creeping and climbing plant like the ivy; and its leaves a good deal resemble those of the citron, though they are longer and narrower at the extremity. It grows in all parts of India, but thrives best in moist places. The natives cultivate it like the vine, placing props for it to climb upon; and it is a common practice to plant it against the tree which bears the arca nut. At all times of the day, and even in the night, the Indians chew the leaves of the betel, the bitterness of which is corrected by the arca that is wrapped up in them. There is constantly mixed with it the chinam, a kind of burnt lime made of shells. The rich frequently add perfumes, either to gratify their vanity, or their sensuality; as it is a powerful incentive to love. Betel is taken after meals; it is chewed during a visit; it is offered when you meet, and when you separate; in short, nothing is to be done without betel. If it is prejudicial to the teeth, it assists and strengthens the stomach. At least, it is a general fashion that prevails throughout India.

3. PIPER INEQUALE, the long pepper of Jamaica. The bush grows taller than the amalago. The leaves are broad, smooth, and shining. The fruit is similar to the long pepper of the shops, but smaller. The common people in Jamaica season their messes with the black pepper. To preserve both, the fruit may be slightly scalded when green, then dried, and wrapped in paper.

4. PIPER SIRIBOA, with oval, heart-shaped, nerved leaves, and reflexed spikes. This is the plant which produces the pepper used in food. It is a shrub whose root is small, fibrous, and flexible; it rises into a stem, which requires a tree or a prop to support it. Its wood has the same sort of knots as the vine; and when it is dry, it exactly resembles the vine branch. The leaves, which have

ve a strong smell and a pungent taste, are of an oval shape; but they diminish towards the extremity, and terminate in a point. From the flower stalks, which are white, and are sometimes placed in the middle and sometimes at the extremity of the branches, are produced small berries resembling those of the currant tree. Each of these contains between 20 and 30 corons of pepper; they are commonly gathered in October, and exposed to the sun 7 or 8 days. The fruit, which was green at first and afterwards red, when stripped of its covering, assumes the appearance it has when we eat it. The largest, heaviest, and least shrivelled, is the best. The pepper plant flourishes in the islands of Java, Sumatra, and Ceylon, and more particularly on the Malabar coast. It is not sown out planted; and great nicety is required in the choice of the shoots. It produces no fruit till the end of 3 years; but bears so plentifully the 3 succeeding years, that some plants yield between 6 and 7 lb. of pepper. The bark then begins to crack; and the shrub declines so fast, that in 12 years it ceases bearing. The culture of pepper is not difficult: it is sufficient to plant it in a rich soil, and carefully to pull up the weeds that grow a great abundance round its roots, especially the first years. As the sun is highly necessary to the growth of the pepper plant, when it is ready to bear, the trees that support it must be lopped or prevent their shade from injuring the fruit. When the season is over, it is proper to crop the head of the plant. Without this precaution, there would be too much wood, and little fruit. See full account of the method of cultivating pepper, in Sumatra, in Mr *Marijden's History of Sumatra*, or *New Annual Register*, 1783, p. 147. The pepper exported from Malabar, which was formerly entirely in the hands of the Portuguese, and is at present divided between the Dutch, British, and French, amounts to about 10,000,000 weight.

PIPERIDGE BUSH. See BERBERIS.

PIPERITÆ. See BOTANY, Index.

PIPERNO, a town and bishop's see of Italy, in the Campagna of Rome; on a mountain, near the Pontine marshes; 9 miles NNW. of Terracina, and 38 SE. of Rome, according to Mr Cruttwell, but 50, says Dr Brookes. Lon. 13. 36. E. Lat. 41. 39. N.

(1.) * PIPE TREE. *n.f.* The lilac tree.

(2.) PIPE TREE, in botany. See SYRINGA.

(3.) PIPE TREE, PUDDING, a species of CASSIA.

* PIPING. *adj.* [from *pipe*.] This word is used only in low language. 1. Weak; feeble; sickly; from the weak voice of the fiek.—

I, in this weak *piping* time of peace,

Have no delight to pass away the time. *Shak.*

2. Hot; boiling: from the sound of any thing that boils.

PIPING TREE, a town of Virginia, 9 miles E. of Newcastle.

* PIPKIN. *n.f.* [diminutive of *pipe*, a large vessel.] A small earthen boiler.—

A *pipkin* there like Homer's tripod walks. *Pope.*

Some officer might give consent

To a large cover'd *pipkin* in his tent. *King.*

(1.) PIPLEY, a town of Hindoostan, in Bengal, on the banks of a river, and borders of Orissa, 15

miles NE. of Balasore. It was formerly a place of trade, and had British and Dutch factories; but is now declined, and chiefly inhabited by fishermen. Lon. 86. 21. E. Lat. 21. 20. N.

(2, 3.) PIPLEY, other two towns of Indostan: 1. in Berrar, 18 miles N. of Jamerabad: 2. in Baglana, 6 miles NW. of Bahbelgong.

(1.) * PIPPIN. *n.f.* [*puppynghes*, Dutch. *Skinmer.*] A sharp apple.—*Pippins* take their name from the small spots or pips that usually appear on the sides of them: some are called stone *pippins* from their obduracy; some Kentish *pippins*, because they agree well with that soil; others French *pippins*, having their original from France, which is the best bearer of any of these *pippins*; the Holland *pippin* and the russet *pippin*, from its russet hue; but such as are distinguished by the names of grey and white *pippins* are of equal goodness: they are generally a very pleasant fruit and of good juice, but slender bearers. *Mortimer*.—We will eat a last year's *pippin* of my own grafting. *Shak.*—Entertain yourself with a *pippin* roasted. *Harvey*.—The *pippin*-woman, I look upon as fabulous. *Addison*.—

His foaming tusks let some large *pippin* grace.

King.

This *pippin* shall another trial make. *Gay.*

(2.) PIPPIN, or PIPPEN. See PYRUS, N° 4.

PIPERA, in ornithology, a genus of birds of the order of *passeres*. Latham gives it the name of *manakin*, and so does Buffon, who informs us that it was bestowed upon them by the Dutch settlers in Surinam. Latham describes 25 different species, and 5 varieties. The general character is, that the bill is short, strong, hard, and slightly incurved; and the nostrils are naked. The middle toe is connected to the outer as far as the third joint: this character, however, is not universal, some species differing in this particular. The tail is short. This genus has a considerable resemblance to the genus *parus*, or titmouse. They are supposed to inhabit South America only, but Mr Latham has seen many of those species which he has described, that came from other parts, which certainly belong to this genus.—Buffon differs widely in his arrangement from him, and only enumerates six species. Buffon gives the following account of the genus in general: "The natural habits common to them all were not known, and the observations which have been made are still insufficient to admit an exact detail. We shall only relate the remarks communicated to us by Sonnini of Manocour, who saw many of these birds in their native climates. They inhabit the immense forests in the warm parts of America, and never emerge from their recesses to visit the cleared grounds of the vicinity of the plantations. They fly with considerable swiftness, but always at a small height, and to short distances; they never perch on the summits of trees, but on the middle branches; they feed upon small wild fruits, and also eat insects. They generally occur in small bodies of 8 or 10 of the same species, and sometimes intermingled with other flocks of the same genus, or even of a different genus, such as the Cayenne warblers, &c. It is commonly in the morning that they are found thus assembled, and then

seem

seem to be joyous, and warble their delicate little notes. The freshness of the air seems to inspire the song, for they are silent during the burning heat of the day, and disperse and retire to the shade of the thickest part of the forest. This habit is observed, indeed, to many kinds of birds, and even in those of the woods of France, where they collect to sing in the morning and evening; but the manakins never assemble in the evening, and continue together only from sun-rise to 9 or 10 o'clock A. M. and remain separate during the rest of the day and the succeeding night. In general they prefer a cool humid situation, though they never frequent marshes or the margins of lakes."

1. *PIPRA MUSICALIS*, or, as Mr Latham calls it, the *tuneful manakin*. Its length is 4 inches, the bill is dusky, the forehead yellow, and the crown and nape blue: the chin, sides of the head below the eyes, and the throat, are black; the upper part of the back, the wings, and the tail, are dusky black; the tail is very short; the lower part of the back and rump, the breast, belly, vent, and thighs, are orange coloured; the legs are dusky. It is a native of St Domingo, where it has gained the name of *organiste* from its note, forming the completest octave in the most agreeable manner, one note successively after another. It is said not to be uncommon, but not easy to be shot, as, like the creeper, it perpetually shifts to the opposite part of the branch from the spectator's eye, so as to elude his vigilance. It is most likely the very bird mentioned by Du Pratz, above quoted, whose notes, he says, are so varied and sweet, and which warbles so tenderly, that those who have heard it value much less the song of the nightingale. It is said to sing for near two hours without scarce taking breath, and, after a respite of about the same time, begins again. Du Pratz, who himself has heard it, says that it sung perched on an oak, near the house he was then in.

2. *PIPRA RUPICOLA*, the *crested manakin*, is about the size of a small pigeon, being about 10 or 12 inches long. The bill is about an inch and a quarter long, and of a yellowish colour. The head is furnished with a double round crest; the general colour of the plumage is orange, inclining to saffron; the wing coverts are loose and fringed; the quills are partly white and partly brown; the tail feathers are 12; the base half of the ten middle ones is of an orange colour, thence to the ends they are brown; the outer feathers are brown, and the base half of the inner web is orange; all are similarly fringed; the upper tail coverts are very long, loosely webbed, and square at the ends; the legs and claws are yellow. The female is altogether brown, except the under wing coverts, which are of a rufous orange; the crest is neither so complete nor rounded as that of the male. Both males and females are at first grey, or of a very pale yellow, inclining to brown. The male does not acquire the orange colour till the 2d year, neither does the female the full brown. "This beautiful species (says Latham), inhabits various parts of Surinam, Cayenne, and Guiana, in rocky situations; but is nowhere so frequent as in the mountain Luca, near the river Oyapoc, and in the mountain Courouaye, near the river Aprouack, where they build in the cavernous hollows, and

the darkest recesses. They lay two round white eggs, the size of those of a pigeon, and make the nest of a few dry bits of sticks. They are in general very shy, but have been frequently tamed, insofmuch as to run at large among the poultry. It is said that the female, after she has laid eggs for some years, and ceases so to do more, becomes at the ensuing moult of the same colour as the male, and may be mistaken for him; in this imitating the females of various kinds of poultry, such as the peacock, pheasant, &c. (See PAVO, &c.) A most complete pair is in the Leverian Museum." Our author describes a variety of this species, which he calls the *Peruvian manakin*. It is longer than the preceding, especially in the tail, and the upper coverts of it are not truncated at the ends; the wing coverts are not fringed as in the rock manakin, and the crest is not so well defined as in that bird; the general colour of the plumage inclines much to red; the second coverts and rump are of an ash colour; the wings and tail are black; the bill and legs are as in the last described. It is an inhabitant of Peru, from whence its name.

PIPRIAC, a town of France, in the dept. of Ille and Vilaine; 10½ miles N. of Redon, and 10½ W. of Bain.

* PIQUANCY. *n. f.* [from *piquant*.] Sharpness; tartness.

* PIQUANT. *adj.* [*piquant*. Fr.] 1. Pricking; piercing; stimulating to the taste.—As *piquant* to the tongue as salt. *Addison*. 2. Sharp; tart; pungent; severe.—Some think their wits asleep, except they dart out somewhat that is *piquant*, and to the quick. *Bacon*.—Men make their raileries as *piquant* as they can. *Gov. of the Tongue*.

* PIQUANTLY. *adv.* [from *piquant*.] Sharply; tartly.—A small mistake may leave upon the mind the memory of having been *piquantly*, though wittily taunted. *Locke*.

(1.) * PIQUE. *n. f.* [*pique*, Fr.] 1. An ill will; an offence taken; petty malevolence. He had never any the least *pique*, difference, or jealousy, with the king his father. *Bacon's Henry VIII.*—Men take up *piques* and displeasures at others. *Decay of Piety*.—Out of a personal *pique* to those in service, he stands as a looker-on, when the government is attacked. *Addison*. 2. A strong passion.—

Though he have the *pique*, and long,
'Tis still for something in the wrong. *Hudibras*.

3. Point; nicety; punctilio.—

Add long prescription of establish'd laws,
And *pique* of honour to maintain a cause. *Dryden*.

(1.) PIQUE, in entomology. See NIGUA, N° 1.

(3.) PIQUE, or PIQUE MONTVALLIER, in geography, the highest mountain among the PYRENEES. It is in the form of a peak, and is visible 50 miles distant. Lon. o. 22. W. Lat. 42. 21. N.

* TO PIQUE. *v. a.* [*piquer*, Fr.] 1. To touch with envy or virulence; to put into fret, to kindle to emulation.—

Piqu'd by Protogenes's fame,
From Co to Rhodes Apelles came. *Prior*.

2. To offend; to irritate.—

Why *pique* all mortals that affect a name?

Pope.
—The lady was *piqued* by her difference. *Femal Quixote*.

Quixotte. 3. [With the reciprocal pronoun:] To value; to fix reputation as on a point. [*Je pique*, French.]—Children, having made it easy to part with what they have, may *piquer themselves* in being kind. *Locke.*—Men apply themselves to two or three foreign, dead, and which are called the least, languages; and *piquer themselves* upon their skill in them. *Locke on Education.*

* *To PIQUEER.* *v. a.* See *PICKER.*

* *PICQUEERER.* *n. f.* A robber; a plunderer. Rather *pickereer*.—The guardian would soon be seconded by some other *picqueerers* from the same camp. *Swift.*

(1.) * *PIQUET.* *n. f.* [*piquet*, Fr.] A game at cards.—

She commonly went up at ten,

Unless *piquet* was in the way.

Prior.

—Instead of entertaining themselves at ombre or *piquet*, they would wrestle and pitch the *bar.* *Speculator.*

(2.) *PIQUET*, or *PICKET*, a game much in use throughout the polite world. It is played between two persons, with only 32 cards; all the aces, threes, fours, fives, and sixes, being set aside. In reckoning at this game every card goes for the number it bears, as ten for ten; only all court cards go for ten, and the ace for eleven; and the usual game is 100 up. In playing, the ace wins the king, the king the queen, and so down. Twelve cards are dealt round, usually by two and two; which done, the remainder are laid in the middle: if one of the gamblers finds he has not a court card in his hand, he is to declare he has *carte-blanche*, and tell how many cards he will lay out, and desire the other to discard, that he may show his game, and satisfy his antagonist that the *carte-blanche* is real; for which he reckons ten. Each person discards, *i. e.* lays aside a certain number of his cards, and takes in a like number from the stock. The first of the eight cards may take three, four, or five; the dealer all the remainder, if he pleases. After discarding, the eldest hand examines what suit he has most cards of; and reckoning how many points he has in that suit, if the other have not so many in that or any other suit, he tells one for every one of that suit. He who thus reckons most is said to win the point. The point being over, each examines what *sequences* he has of the same suit, *viz.* how many tierces, or sequences of three, quarts or fours, quintes or fives, sixiemes, or fixes, &c. For a tierce they reckon three points, for a quart four, for a quinte 15, for a fixieme 16, &c. And the several sequences are distinguished in dignity by the cards they begin from: thus ace, king, and queen, are called *tierce major*; king, queen, and knave, *tierce to a king*; knave, ten, and nine, *tierce to a knave*, &c. and the best tierce, quart, or quinte, *i. e.* that which takes its descent from the best card, prevails, so as to make all the others in that hand good, and destroy all hope in the other hand. In like manner, a quart in one hand sets aside a tierce in the other. The sequences over, they proceed to examine how many aces, kings, queens, knaves, and tens, each holds; reckoning for every three of any sort, three; but here too, as in sequences, he that with the same number of threes has one that is higher

than any the other has, *e. gr.* three aces, has all his others made good hereby, and his adversary's all set aside. But four of any sort, which is called a *quatorze*, always sets aside three. All the game in hand being thus reckoned, the eldest proceeds to play, reckoning one for every card he plays above a nine, and the other follows him in the suit, and the highest card of the suit wins the trick. Note, unless a trick be won with a card above a nine (except the last trick), nothing is reckoned for it; though the trick serves afterwards towards winning the cards; and that he who plays last does not reckon for his cards unless he wins the trick. The cards being played out, he that has most tricks reckons ten for winning the cards. If they have tricks alike, neither reckons any thing. The deal being finished, and each having marked up his game, they proceed to deal again as before, cutting afresh each time for the deal. If both parties be within a few points of being up, the *carte blanche* is the first thing that reckons, then the point, then the sequences, then the quatorzes or threes, then the tenth cards. He that can reckon 30 in hand by *carte blanche*, points, quintes, &c. without playing, ere the other has reckoned any thing, reckons 90 for them; and this is called a *repique*. If he reckons above 30, he reckons so many above 90. If he can make up 30, part in hand and part play, ere the other has told any thing, he reckons for them 60. And this is called a *pique*; whence the name of the game. He that wins all the tricks, instead of ten, which is his right for winning the cards, reckons 40. And this is called a *capot*.

(3.) *PIQUETS*, in artillery, &c. See *PICKET*.

(4.) *PIQUETS*, in botany, a species of *DIANTHUS*.

(I.) *PIRA*, in geography, a town of Germany, in Austria; 6 miles SSE. of Polten.

(II.) *PIRA*, in ichthyology, a name given to a variety of foreign fishes:

1. *PIRA ACA*, a little horned fish of the West Indies, called by Cluflus and others, *MONOCEROS*.

2. *PIRA ACANGATA*, a Brazilian fish, which resembles the perch in size and shape; but seldom exceeds 4 or 5 inches in length; its mouth is small; its tail forked. On the back it has only one long fin, supported by rigid and prickly spines. This fin it can depress at pleasure, and sink within a cavity made for it in the back. Its scales are of a silvery white colour; it is wholesome and well tasted.

3. *PIRA BEBE*, the milvus, or kite-fish.

4. *PIRA COABA*, an American fish of the turtaceous kind, of a very delicate flavour. It grows to 12 inches; its nose is pointed, and its mouth large, but without teeth; the upper jaw is longer than the under one, and hangs over like a cartilaginous prominence; its eyes are very large, and its tail is forked; under each of the gill fins there is a beard of six white filaments, covered with silvery scales.

5. *PIRA JURUMENBECA*, a Brazilian fish, otherwise called *bocca molle*. It lives in the muddy bottom of the American seas, and is a long bodied, not flatted fish. It grows to a great size, being found 9, sometimes even 10 or 11 feet long,

and 2½ feet thick. It has one long fin on the back, the anterior part of which is thin and pelucid. There is also a cavity on the back, as in the *pira acangata*, into which the fin can be depressed at pleasure; the tail is not forked, and the scales are all of a silvery colour and brightness. The fish is very well tasted.

6. *PIRA PIRANHA*, an American fish, more generally known by the name *piraya*.

7. *PIRA PIRAQUIBA*, or *Ipiraquiba*, a fish originally Brazilian, which some writers apply to the *remora*, or *sucking fish*.

8. *PIRA PIXANGA*, another Brazilian fish of the *turdus* or *wrasse* kind, called by some the *gato-fish*. It is generally about 4 or 5 inches long; its mouth is pretty large, and furnished with very small, and very sharp teeth; its head is small, but its eyes are large and prominent, the pupil being of a fine turquoise colour, and the iris yellow and red in a variety of shades. The coverings of the gills end in a triangular figure, and are terminated by a short spine or prickle; its scales are very small, and so evenly arranged, and closely laid on the flesh, that it is very smooth to the touch; its tail is rounded at the end; its whole body, head, tail, and fins, are of a pale yellow colour, variegated all over with very beautiful blood-coloured spots; these are round, and of the likeness of hemp seed on the back and sides, and something larger on the belly; the fins are all spotted in the same manner, and are all marked with an edge of red. It is caught among the rocks, and about the shores, and is a very well tasted fish.

(1.) * **PIRACY.** *n. f.* [*πυραγία*; *piratica*, Lat. *piraterie*, Fr. from *pirate*.] The act or practice of robbing on the sea.—Our gallants, in their fresh gale of fortune, began to skim the seas with their *piracies*. *Carew*.—

Now shall the ocean, as thy Thames, be free,

From both those fates of storms and *piracy*.

Waller.
Sounding your name, and telling dreadful news

To all that *piracy* and rapine use. *Waller*.

—His pretence for making war upon his neighbours was their *piracies*; though he practised the same trade *Arbutnot*.

(2.) **PIRACY**, by the ancient common law, if committed by a subject, was held to be a species of *treason*, being contrary to his natural allegiance; and by an alien, to be felony only: but now, since the statute of treasons, 25 Edw. III. c. 2, it is held to be only felony in a subject. Formerly it was only cognizable by the admiralty courts, which proceed by the rules of the civil law. But, it being inconsistent with the liberties of the nation, that any man's life should be taken away, unless by the judgement of his peers, or the common law of the land, the statute 28 Hen. VIII. c. 15, established a new jurisdiction for this purpose; which proceeds according to the course of the common law. This offence, by common law, consists in committing those acts of robbery and depredation upon the high seas, which, if committed upon land, would have amounted to felony there. But, by statute, some other offences

are made piracy also: as, by statute 11 and 12 III. c. 7, if any natural born subject commits an act of hostility upon the high seas, against one of his majesty's subjects, under colour of a commission from any foreign power; this, though would only be an act of war in an alien, shall construed piracy in a subject. And farther, a commander, or other staining person, betraying his trust, and running away with any ship, ordnance, ammunition, or goods; or yielding them up voluntarily to a pirate; or conspiring to do these acts; or any person assaulting the commander of a vessel, to hinder him from fighting in defence of his ship; or confining him, or causing or endeavouring to cause a revolt on board, shall, for each of these offences, be adjudged pirate, felon, and robber, and shall suffer death, whether he be principal, or merely accessory, for setting forth such pirates, or abetting them in the fact, or receiving or concealing them or the goods after it. And the stat. 4 Geo. I. c. 11, expressly excludes the principals from the benefit of clergy. By the stat. 8 Geo. I. c. 24, the trading with known pirates, or furnishing them with ammunition, or fitting out any vessel for that purpose, or in anywise consulting, combining, considering, or corresponding with them; or the forcibly boarding any merchant vessel, though without seizing or carrying her off, and destroying or throwing any of the goods overboard, shall be deemed piracy: and such accessories to piracy as are described by the statute of king William are declared to be principal pirates; and pirates convicted by virtue of this act are made felons without benefit of clergy. By the same statutes also, (to encourage the defence of merchant vessels against pirates,) the commanders of seamen wounded, and the widows of such seamen as are slain, in any piratical engagement, shall be entitled to a bounty, to be divided among them, not exceeding one fiftieth part of the value of the cargo on board; and such wounded seamen shall be entitled to the pension of Greenwich hospital, which no other seamen are, except only such as have served in a ship of war. And if the commander shall behave cowardly, by not defending the ship, if she carries guns or arms; or shall discharge the mariners from fighting, so that the ship falls into the hands of pirates; such commander shall forfeit all his wages, and suffer six months imprisonment. Lastly, by statute 18 Geo. II. c. 30, any natural born subject or denizen, who at time of war shall commit hostilities at sea against any of his fellow-subjects, or shall assist an enemy on that element, is liable to be tried and convicted as a pirate.

PIRÆUS, or **PORTUS**, in ancient geography, **PIRÆUS**, *Ἰπρῆος*, a celebrated port of the W. of Athens, consisting naturally of three harbours or basins, which lay neglected, till Themistocles put the Athenians on making it a commodious port; the *Phalerus*, a small port, and not far from the city, being what they used before that time. (*Thucyd. Pauf. Nepos*.) *Piræus* was originally a village of Attica, on an island and though distant 40 stadia from Athens, was joined to it by two long walls, and itself inclosed or walled round; with a very commodious and

safe harbour. (*Pauf. Strab. Thucyd.*) The whole of its compass was 60 stadia, including the Munychia. Near the Piræus stood the sepulchre of Themistocles; whither his friends conveyed his bones from Magnesia, into the Hither Asia. (*Cic. Plut. Pauf.*) The entrance of the Piræus is narrow, and formed by two rocky points, one belonging to the promontory of Eetion, the other to that of Alcmus. Within were three stations for shipping; Kantharus, so named from a hero; APHRODISIUM, from a temple of Venus; and ZEA, the rest of vessels laden with grain. By it was a demos or borough town of the same name before the time of Themistocles, who recommended the exchanging its triple harbour for the single one of Phalerum, both as more capacious, and as better situated for navigators. The wall was begun by him when archon, in the 2d year of the 75th Olympiad, A. A. C. 477; and afterwards he urged the Athenians to complete it as the importance of the place deserved. This whole fortification was of hewn stone, without cement or other material, except lead and iron, which were used to hold together the exterior ranges or facings. It was so wide that the loaded carts could pass on it in different directions, and it was 40 cubits high, which was only about half what he had designed. The Piræus, as Athens flourished, became the common emporium of all Greece. Hippodamus, an architect, celebrated, besides other monuments of his genius, as the inventor of many improvements in house building, was employed to lay out the ground. Five porticoes, which uniting form the *Long Portico*, were erected by the ports. Here was an *agora* or market place, and, farther from the sea, another called *Hippodamia*. By the vessels were dwellings for the mariners. A theatre was opened, temples were raised, and the Piræus, which surpassed the city in utility, began to equal it in dignity. The cavities and windings of Munychia, natural and artificial, were filled with houses; and the whole settlement, comprehending Phalerum and the ports of the Piræus, with the arsenals, the storehouses, the famous armoury of which Philo was the architect, and the sheds for 300, and afterwards 400, triremes, resembled the city of Rhodes, which had been planned by the same Hippodamus. The ports, on the commencement of the Peloponnesian war, were secured with chains. Centinels were stationed, and the Piræus was carefully guarded. The Piræus was reduced with great difficulty by Sylla, who demolished the walls, and set fire to the armoury and arsenals. In the civil war it was in a defenceless condition. Calenus, lieutenant to Cæsar, seized it, invested Athens, and ravaged the territory. Strabo, who lived under the emperors Augustus and Tiberius, observes, that the many wars had destroyed the long walls, with the fortrefs of Munychia, and had contracted the Piræus into a small settlement by the ports and the temple of Jupiter the Saviour. This fabric was then adorned with capital pictures, the works of illustrious artists, and on the outside with statues. In the 2d century, besides houses for triremes, the temple of Jupiter and Minerva remained, with their images in brass, and a temple of Venus, a portico, and the tomb of

Themistocles. The port of the Piræus has been named *Porto Leone*, from the marble lion seen in the chart, and also *Porto Draco*. The lion was a piece of admirable sculpture, 10 feet high, and reposing on its hinder parts. It was pierced, and, as some think, belonged to a fountain. Near Athens, in the way to Eleusis, was another, couchant; probably its companion. Both were removed to Venice by general Morosini, and probably thence to Paris, along with the two Venetian brazen lions, by Bonaparte. At the mouth of the port are two ruined piers. A few vessels, mostly small craft, frequent it. Some low land at the head seems an encroachment on the water. The buildings are a mean customhouse, with a few sheds; and by the shore on the east side, a warehouse belonging to the French; and a Greek monastery dedicated to St Spiridon. On the opposite side is a rocky ridge, on which are remnants of the ancient wall, and of a gateway towards Athens. By the water edge are vestiges of building; and going from the customhouse to the city on the right hand, traces of a small theatre in the side of the hill of Munychia.

PIRAGINEN, a town of Prussian Lithuania, 2 miles NE. of Insterburg.

PIRANESI, an eminent Venetian architect and engraver, born about 1711. He was remarkable for a bold and free manner of etching, whereby he drew his figures upon the plate at once. He died in 1780.

PIRANO, a sea port town of Maritime Austria, in Istria, capital of a district so named, seated on a peninsula, 10 miles S. of Capo, famous for its trade in salt. Lon. 14. 1. E. Lat. 45. 40. N.

(1.) * **PIRATE.** *n. f.* [*ῥάπτης*, Gr. *pirata*, Lat. *pirata*, Fr.] 1. A sea-robber.—Pirates all nations are to prosecute, not so much in the right of their own fears, as upon the band of human society. *Bacon*.—

Savage pirates seek through seas unknown

The lives of others, vent'rous of their own.

Pope.

2. Any robber; particularly a bookfeller who seizes the copies of other men.

(2.) **PIRATE** is also used for an armed ship that roams the seas without any legal commission, and seizes or plunders every vessel she meets indiscriminately, whether friends or enemies. The colours usually displayed by pirates are a black field, with a death's head, a battle-axe, and hour glass. The last instrument is generally supposed to determine the time allowed to the prisoners, whom they take, to consider whether they will join the pirates in their felonious combination, or be put to death; which is often perpetrated in the most cruel manner.

(1.) * **To PIRATE.** *v. a.* [*pirator*, Fr.] To take by robbery.—

They advertised, they would *pirate* his edition. *Pope.*

(2.) * **To PIRATE.** *v. n.* [from the noun.] To rob by sea.—They robbed by land, and *pirated* by sea. *Arbutnot*.

* **PIRATICAL.** *adj.* [*piraticus*, Lat. from *pirate*.] 1. Predatory; robbing; consisting in robbery.—A kind of *piratical* trade, robbing, spoiling.

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lag, and taking prisoners the ships of all nations. *Bacon*. 2. Practising robbery. The errors of the press were multiplied by *piratical* printers. *Pope*.

PIRAUGY, a river of Brazil, SE. of Rio Grand.

PIRAZZETA, a town of Naples, in Basilicata; 14 miles NE. of Turin.

PIRE, a town of France, in the dep. of Ille and Vilaine; 3 miles SE. of Chateau Givon, and 9 WNW. of Gurrche.

PIREMIL, a town of France, in the dep. of the Sarthe; 10 miles NE. of Sable.

(1.) **PIRENE**, a fountain sacred to the Muses, springing below the top of the Acrocorinthus, a high and steep mountain which hangs over Corinth. Its waters were agreeable to drink, extremely clear, very light and pale, representing the grief of **PIRENE**, and the pænefess brought on by the too eager pursuits of the Muses. *Plin. Paus. Strab. Athen. Pers.*

(2.) **PIRENE**, in fabulous history, a daughter of the river god, Achelous, who had two sons by Neptune, named *Lecheus* and *Cenchrius*, from whom the two harbours of Corinth were named. The latter was killed by Diana, and Pirene was so disconsolate for his death, that she wept continually till she was dissolved into the fountain that bears her name.

PIRGIA, a town of Asiatic Turkey, in Carmania; 112 miles SW. of Cogni.

(1.) **PIRGO**, a town of European Turkey, in Albania; at the mouth of the Palonia, 20 miles N. of Valona.

(2.) **PIRGO**, a town in the isle of Santorin, in the Grecian Archipelago, 2 miles S. of Scaro.

PIRI, a province of Africa, in Loango.

PIRIAC, a town of France, in the dep. of the Lower Loire, on the sea coast; 9 miles NW. of Guerande.

PIRIATIN, a town of Russia, in Kiof, 63 miles ESE. of Kiof. Lon. 50. 28. E. of Ferro. Lat. 51. 13. N.

PIRIN'S ISLAND, an island of Africa in the mouth of the Olibato, 5 miles in circumference.

PIRIOUTI, a town of Asia in Thibet; 60 m. E. of Pandou.

PIRITHOUS, in fabulous history, a king of the Lapithæ, in Thessaly, son of Ixion and the cloud; or as others say, of Jupiter and Dia. Hearing of the exploits of **THESEUS**, he resolved to try his valour by invading Attica; but when the two monarchs met at the head of their armies, instead of fighting, they formed a lasting friendship, which became proverbial. Pirithous soon after married Hippodamia, the daughter of A-draustus, K. of Argos, when not only the Centaurs and all the heroes of the age, but the gods themselves were invited, all except Mars, who avenged the neglect, by occasioning dissension among the guests. The centaur Eurythion, attempting to offer violence to the bride, was killed by Theseus; on which a general battle ensued between the Centaurs and Lapithæ, wherein the former were defeated. See **LAPITHÆ**. After this, Hippodamia dying, Pirithous became disconsolate; still, continuing with Theseus, they formed the desperate enterprise of descending to hell, and

carrying off the goddess Proserpine; for which Pluto condemned Pirithous to be tied to Ixion's wheel, or worried by the dog Cerberus. But he was soon after delivered by Hercules, and restored to his kingdom. *Ovid. Hesiod. Homer. Paus. Apollod.*

PIRITZ, a town of Pomerania, in Stettin, anciently a residence of the dukes of Pomerania. It is memorable for being the first town in that duchy that renounced paganism for Christianity; and afterwards the first that exchanged popery for Lutheranism. It is seated near lake Maldui, 11 miles C. of Stargard, 20 SE. of Stettin, and 32 N. of Cultrim. Lon. 14. 20. E. Lat. 53. 18. N.

PIRMASENS, a town of France in the department of the Rhine and Moselle, and late lordship of Lichtenberg; 12 miles SE. of Deux Ponts, and 18 W. of Landau. Near this town the French were defeated by the Prussians, under the D. of Brunswick, on the 14th Sept. 1793; and lost 3000 prisoners and 29 cannons.

PIRNA, a town of Upper Saxony, in Meissen, on the Elbe; with a good trade; 9 miles SSW. of Stoipen, and 11 SE. of Dresden. Lon. 31. 42. E. Ferro, Lat. 50. 54. N.

PIROMALLI, Paul, a learned dominican of Calabria, who was sent a missionary into the east. He remained long in Armenia, where he brought back to the church many schismatics and Eurychians, and the patriarch himself, who had before thrown every obstacle in his way. He afterwards went into Georgia and Persia, then into Poland, as Pope Urban VIII's nuncio, to appease the disturbances occasioned there by the Armenians, whom he reunited to the church. In his return to Italy, he was taken by some Corsairs who carried him prisoner to Tunis. As soon as he was ransomed, he went to Rome and gave an account of his mission to the pope, who conferred upon him signal marks of his esteem; entrusted him with the revival of an Armenian Bible, and sent him again into the east where he was promoted, in 1655, to the bishopric of Nassyvan. After having governed that church for nine years, he returned to Italy, and took the charge of the church of Balignano, where he died in 1667. His charity, and other virtues, did honour to his character and office. There are extant, of his writings, 1. Some works of Controversy and Theology. 2. Two Dictionaries; the one a Latin-Perisian, and the other an Armenian-Latin. 3. An Armenian Grammar. 4. A Directory, which is of great use in correcting Armenian books.

PIRON, Alexis, the son of an apothecary, born at Dijon, 9th July 1689, where he passed above 30 years in dissipation. He was at length obliged to quit Dijon, on account of an ode he had written, which gave great offence. He supported himself at Paris by his pen, the strokes of which were as beautiful as if they had been engraved. He lived in the house of M. de Bellisle, as his secretary, and afterwards with a financier. His reputation as a writer commenced with some pieces which he published, which shewed strong marks of original invention; but what fully established his character in this way, was his comedy entitled *Métromanie*, which was the best that had appeared in France since Regnard's *Comelier*.

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This performance, in five acts, well conducted, replete with genius, wit, and humour, was acted with the greatest success upon the French stage in 1738. The author met with every attention in the capital which was due to a man of genius, whose flashes of wit were supposed to be inexhaustible: but of the numerous anecdotes recorded of his humour, we have not seen one worthy of quoting. They all evidence on his part, an intolerable degree of self-conceit. He died the 21st Jan. 1773, aged 83. His wife, Maria Theresa Quenandon, who died in 1751, he describes as a most agreeable companion. They lived together for several years; and no husband ever discharged his duty with more fidelity. A collection of his works appeared in 1776, in 7 vols 8vo, and 9 vols 12mo. The principal pieces are, *The School of Eathers*; a comedy, acted in 1728. *Callisthenes*; a tragedy, the subject from Justin. *The Mysterious Lover*, a comedy. *Gustavus and Ferdinand Cortez*, two tragedies. *The Courses of Tempe*, an ingenious pastoral. Some odes, poems, fables, and epigrams. In this last kind of poetry he was very successful; but there was no occasion for loading the public with 7 vols. of his works; the half of that number might have sufficed. For, excepting *Metromony*, *Gustavus*, the *Courses of Tempe*, some odes, about 20 epigrams, 3 or 4 fables, and some epistles, the rest are indifferent.

PIROT, a town of European Turkey, in Bulgaria, 30 miles NW. of Sophia.

PIRRAWARTH, a town of Austria, 7 miles SW. of Zistersdorf, and 14 NNE. of Vienna.

PIRUSTÆ, an ancient nation of Illyricum. *Livy*, 45: c. 26.

(1.) PISA, in ancient geography, a town of Elis, on the Alphæus, at the W. end of the Peloponnese, founded by PISUS. OENOMAUS reigned in it, till he was conquered by Pelops. (See PELOPS.) Its inhabitants accompanied NESTOR to the Trojan war, and long enjoyed the privilege of presiding at the OLYMPIC GAMES, which were celebrated near Pisa. But this honourable distinction proved at last their destruction. For they were envied for it by the people of Elis, who made war upon them, and after many bloody battles, with various success, at last took their city and totally demolished it. Pisa was famous for its horses; its inhabitants were called PISÆI and PISATES; and a colony of them founded PISÆ, now PISA, in Italy. See N° 2.

(2.) PISA, in modern geography, a large town of Etruria, or Tuscany, seated on the Arno, 52 miles from Florence. It was a famous republic, till subdued, first by the duke of Milan, and then by the Florentines in 1406. Before it lost its freedom, it is said to have contained near 150,000 inhabitants, but now it has not above 16,000 or 17,000. It was founded by the Pisans of Peloponnese, and afterwards became one of the 12 municipia of Tuscany. Its neighbourhood to Leghorn, now the chief port in the Mediterranean, contributed greatly to the decay of Pisa, which, however, now begins to flourish again. The houses are well built, and the streets even, broad, and well paved; but in many places over-run with grass. The university is well endowed, and has

able professors, but is not flourishing. The exchange is a stately structure, but little frequented. The king of Etruria's galleys are built, and commonly stationed here. This city is also the principal residence of the order of St Stephen, and the see of an archbishop. The cathedral, a large Gothic pile, contains a great number of excellent paintings and other curiosities. This church is dedicated to St Mary; is very advantageously situated in the middle of a large piazza, and built out of a great heap of wrought marble, such as pillars, pedestals, capitals, cornices, and architraves, part of the spoil which the Pisans took in their eastern expeditions, when the republic was flourishing. The roof is supported by 76 high marble pillars of different colours, finely gilt. In the same square with the dome, stands the baptistry, a round fabric supported by stately pillars, and remarkable for a very extraordinary echo. On the N. side of the cathedral is the burying place, called *Campo Santo*, being covered with earth brought from the Holy Land. This burying place is inclosed with a broad portico, well painted, and paved with grave stones. Here are many ancient tombs, among the rest that of Beatrix, mother of the countess Mathilda, with marble bas-reliefs, which the Pisans brought from Greece, wherein is the hunt of Meleager, which assisted Nicholas of Pisa in the restoration of sculpture. The walls of the Campo Santo are painted by the best masters of their times. Giotto has drawn six historical pieces of Job; and Andrew Orgagna, a fine piece of the last judgment. Near the church is a steeple in the form of a cylinder, which is ascended by 153 steps; it inclines 15 feet to one side, which some ascribe to art, but others to the sinking of the foundation. It was built by John of Inspruck and Bonanno of Pisa, in 1174. Near this steeple is a fine hospital, dependent on that of St Maria Nuova in Florence. The steeple of the church of the Augustinians is an octagon adorned with pillars, built by Nicholas of Pisa. In the great market place is a statue of Plenty, by Da Vinci. The church of the knights of St Stephen, decorated with the trophies taken from the Saracens, is all of marble, with marble steps, and a front with marble statues. In the square there is a statue of Cosmo I. Contiguous to the church is the palace of the knights; also the churches of Madonna and Spina; the last of which was built by a beggar. There is a great number of colleges, the chief of which is the Sapienza, where the professors read their public lectures; next the colleges Puteano, Ferdinando, Ricci, and others. There are several palaces with marble fronts; the finest is that of Lanfranchi, which, with the rest along the Arno, makes a very fine appearance. There is a good dock, where they build the galleys, which are conveyed by the Arno to Leghorn. They have a famous aqueduct, consisting of 5000 arches, which conveys the water from the hills, 5 miles distant. This water is esteemed the best in Italy, and is carried in fasks to Florence and Leghorn. The city has a moat, walls, a castle, fort, and citadel; the last of which is a modern work. The Arno is of a considerable breadth here, and has 3 bridges, one of marble: 6 miles below the town it falls into the sea. The physic garden is

very

very spacious, contains a great number of plants, and is decorated with water-works. The air is unwholesome in summer, from the neighbouring morasses. Many buffaloes are bred in the neighbouring country, and their flesh is eaten. Between Pisa and Lucca are hot baths, Lon. 10. 17. E. Lat. 43. 43. N.

(3.) **PISA**, a river of Italy, in Etruria, which runs into the Arno near Pisa.

PISÆ, in ancient geography, a town of Etruria, built by a colony of Pisæi, from Pisa in Peloponnesus. Dionysius of Halicarnassus says it was built before the Trojan war; but others say it was built by those Pisæans who were shipwrecked on the coast of Italy in their return from it. The people were called **PISANI**, and were once very powerful. They conquered Sardinia, Corsica, and the Balæares Islands. *Virg. Æn. x. 179. Strabo, 5. Lucan. ii. 401. Liv. 39. 2.* It is now called *Pifa*. See **PISA**, N° 2.

PISÆANS, } **PISÆANS**, the ancient inhabitants
PISÆI, or } of Pisa in Elis.

PISÆUS, an epithet of Jupiter.

(1.) **PISAN**, Thomas, a celebrated astrologer of Bologna, who was invited to Venice by Dr Forli, counsellor of the republic, who gave him his daughter in marriage. Charles V. of France invited him to his court, and he went in 1380, and predicted the day of his death, which, it is said, happened accordingly.

(2.) **PISAN**, Christina, daughter of the astrologer, was a person of more consequence than her father. She was born at Venice in 1363, and was both a beautiful woman and an accomplished writer. She wrote the Life of king Charles V. of France, and was much patronized by Charles VI.

PISANA. See **PICOSA**.

PISANI, the ancient inhabitants of Pisæ.

PISANO, a territory of Italy, in Etruria, 47 miles long, and 25 broad. It is bounded on the N. by the Florentino, and the republic of Lucca; on the E. by the Sionnese, and on the W. by the Mediterranean. It is fertile in corn, wine, and fruits; and abounds with fine cattle. It is esteemed the best country in Etruria. Pisa is the capital. There is a canal 16 Italian miles long, between Pisa and Leghorn.

PISANY, a town of France, in the department of Lower Charente; 6 miles SW. of Saintes.

PISATES, the people of Pisa in Elis.

PISAURUM, in ancient geography, a town of Italy, in Picenum. It became a Roman colony, in the consulship of Claudius Pulcher. It is now called **PESARO**. It was destroyed by an earthquake, in the beginning of Augustus's reign. *Plin. 3. Liv. 39. c. 44.*

PISAURUS, a river of Italy, in Picenum, now called **FOGLIO**, *Mela*.

(1.) **PISCA**, a handsome town of Peru, in Limna, in a fertile country, half a mile from the coast of the South Sea, and 140 S. of Limna. Lon. 76. 15. W. Lat. 15. 36. S.

(2.) **PISCA PIGNATARA**, a town of Naples, in Molise; 15 miles NW. of Molise.

PISCADORE ISLANDS, a cluster of islands in the N. Pacific Ocean. Lon. 192. 30. W. Lat. 11. 9. N.

(1.) * **PISCARY**. *n. f.* A privilege of fishing. *Dict.*

(2.) **PISCARY**, in ancient statutes, is the liberty of fishing in another man's waters.

(1.) **PISCATAQUA**, or } a large river of the U-

(1.) **PISCATAQUAY**, } nited States, in New Hampshire, which rises from a pond in the NE. corner of Wakefield, and after running 40 miles SSE. falls into the sea at Piscataqua harbour.

(2.) **PISCATAQUAY**, or **PISCATAQUA**, a town of New Hampshire, at the mouth of the above river, the only sea port in the state, with a good harbour and a light-house, 60 miles N. of Boston. Lon. 70. 41. W. Lat. 43. 4. N.

(1.) **PISCATAWAY**, a river of Maryland, which runs into the Potomac, 8 miles below Alexandria.

(2.) **PISCATAWAY**, a town of Maryland in Prince George's County, on the above river; 37 miles SW. of Annapolis, and 165 SW. of Philadelphia. Lon. 1. 58. W. of that city. Lat. 38. 46. N.

(3.) **PISCATAWAY**, a township of New Jersey, in Middlesex county, on the Rariton, 6 miles above its mouth. It contained 2043. citizens, and 218 slaves in 1793.

(4.) **PISCATAWAY**, a town of Virginia, 3 miles SW. of Tappahannock.

* **PISCATION**. *n. f.* [*piscatio*, Lat.] The act or practice of fishing.—There are four books of cynegeticks, or venation; five of halieuticks, or *piscation*, commented on by Ritterhusius. *Brown's Vulgar Errors*.

* **PISCATORY**. *adj.* [*piscatorius*, Lat.] Relating to fishes.—On this monument is represented, in bas-relief, Neptune among the satyrs, to shew that this poet was the inventor of *piscatory* eclogues. *Addison's Remarks on Italy*.

PISCES, in astronomy, the 12th sign or constellation of the zodiac. See **ASTRONOMY**, § 548.

PISCH, a river of Poland, which runs into the Narew, near Pultusk, in Masovia.

PISCHENA, a town of Silesia, in Brieg.

PISCHIERA. See **PESCHIERA**.

PISCHMA, a river of Russia, which runs into the Tura, near Tiumen.

PISCIDIA, a genus of the decandria order, belonging to the diadelphia class of plants; and in the natural method, ranking under the 32d order, *Papilionacea*. There are two species: viz.

1. **PISCIDIA CARTHAGINIENSIS**, with oblong oval leaves, is a native of the West Indies. It differs from the **ERYTHRINA**, (see N° 2.) only in the shape and consistence of the leaves, which are more oblong and stiffer; but in other respects they are very similar.

2. **PISCIDIA ERYTHRINA**, the DOG-WOOD TREE, grows plentifully in Jamaica, where it rises to 25 feet or more; the stem is almost as large as a man's body, covered with a light coloured smooth bark, and sending out several branches at the top without order: the leaves are about two inches long, winged with oval lobes. The flowers are of the butterfly kind, and of a dirty white colour; they are succeeded by oblong pods, with four longitudinal wings, and jointed between the cells which contain the seeds. Both species are easily propagated by seeds; but require artificial heat to preserve them in this country.—The negroes in the West Indies make use of the bark of this species to intoxicate fish. When gentlemen have an inclination

clination to divert themselves with fishing, or rather with fish-hunting, they send each of them a negro slave to the woods, to fetch some of the bark of the dog-wood tree. This bark is next morning pounded very small, put into old sacks, carried into rocky parts of the sea, steeped till thoroughly soaked with salt-water, and then well squeezed by the negroes to express the juice. This juice immediately colours the sea with a reddish hue; and, being of a poisonous nature, will in an hour make the fishes, such as groopers, rock-fish, old wives, Welchmen, &c. so intoxicated, as to swim on the surface of the water, quite heedless of the danger; the gentlemen then send in their negroes, who pursue, swimming and diving, the inebriated fishes, till they catch them with their hands; their masters standing by, on high rocks, to see the posture. It is remarkable, that though this poison kills millions of the small fry, it has never been known to impart any bad quality to the fish which have been caught in consequence of the intoxication. The wood of this tree, although pretty hard, is only fit for fuel; and even for this purpose the negroes very seldom, if ever, employ it, on account of its singular quality just mentioned. The bark is rough, brown, and thick; the tree sends forth a considerable number of branches, and is well clothed with leaves, which resemble those of the pea, are thick, cottony, and of a deep green. The bark used for the above-mentioned purpose is chiefly that of the roots.

(1.) PISCINA, in antiquity, a large basin in a public place or square, where the Roman youth learned to swim; and which was surrounded with a high wall, to prevent silt from being thrown into it. This word is also used for a lavatory among the Turks, placed in the middle court of a mosque, or temple, where the Mussulmen wash themselves before they offer their prayers.

(2.) PISCINA, in geography, a town and bishop's see of Naples, in Abruzzo Ultra; 18 miles S. of Aquila, and 18 N. of Sora.

PISCIOTA, a town of Naples, in Principato Citra; 16 miles W. of Policastro.

* PISCIVOROUS. *adj.* [*piscis* and *voro*.] Fish-eating; living on fish.—In birds that are not carnivorous, the meat is swallowed into the crop or into a kind of antestomach, observed in *piscivorous* birds, where it is moistened and mollified by some proper juice. *Ray*.

(1.) PISCO, a sea port town of Peru, in Lima, formerly seated on the coast of the South Sea, but now removed a quarter of a league from it, in consequence of a dreadful earthquake, which happened on the 19th Oct. 1682; when the sea retired half a league, and then returned with such violence, that it overflowed nearly as much land beyond and destroyed the whole old town. Pisco contains about 300 families, mostly negroes, mulattoes, and mestizoes, there being but few whites. It has 3 churches, and a chapel for Indians. The road is safe and capacious enough to hold a large navy. It is 18 miles from Chinca, and 110 SSE. of Lima. Lon. 76. 15. W. Lat. 13. 36. S.

(2.) PISCO, OLD. See above. The ruins of this town are still visible, and extend from the sea coast to the new town.

(3.) PISCO PAGANO, a town of Naples, in Basilicata; 7 miles NW. of Muro.

PISCOBAMBA, a town of Peru, in Guamali.

PISCOPIA, an island in the Mediterranean, 16 miles NW. of Rhodes,

PISDORFF, a town of Germany, in Austria; 3 miles NE. of Entzerstorf.

PISEANS. See PISA, N° 2, and PISÆ.

PISEK, a town of Bohemia, in Prachatitz, on the Watawa. It was dreadfully laid waste during the war that lasted 30 years in the 15th century. It is 20 m. N. of Prachatitz, and 46 S. of Prague.

PISELLO, the most northern cape of Asia, in Natolia, which projects into the Black Sea, opposite Crimea.

PISENBERG, a town of Germany in Austria, one mile E. of Korn Neuburg.

(1.) PISGAH, or PHASGAH, a mountain on the other side Jordan, joined to Abarim and Nebo, and running S. to the mouth of the Arnon; from which Moses had a view of the promised land, and where he died, after appointing Joshua his successor. (See ABARIM.) Wells takes Pisgah and Nebo to be different names of the same mountain, a part or branch of the mountain Abarim. (Deut. xxxii. 49. compared with Deut. xxxiv. 1.) Or that the top of Nebo was peculiarly called *Pisgah*; or some other part of it, cut out in steps, as the primitive word denotes: and thus it is rendered by Aquila, by a Greek word signifying *cut out*. *Jerome*.

(2, 3.) PISGAH, a city and territory of Palestine, adjacent to Mount Pisgah. *Jerome*.

* PISH. *interj.* A contemptuous exclamation. This is sometimes spoken and written *pshaw*. I know not their etymology, and imagine them formed by chance.—

However they have writ the stile of gods,
And made a *pish* at chance or sufferance. *Shak*
—She frowned and cried *pish*, when I said a thing
that I stole. *Spekt*.

* To PISH. *v. n.* [from the interjection.] To express contempt.—He turn'd over your Homer, shook his head, and *pish'd* at every line of it. *Pope*.

PISHOUR. See PISHORE.

PISIDIAE, the ancient inhabitants of PISIDIA. *Cic. de Div. 1. c. 1. Liv. 37. c. 54. 56.*

PISIDIA, an inland country of Asia Minor, between Phrygia, Pamphylia, Galatia, and Iauria. *Mela 1. c. 2. Strabo xii. Ads xiii. 14—52.*

PISIN, a town of Maritime Austria, in Istria; 7 miles N. of Pedena.

PISIS, a native of Thespia, who obtained great influence among the Thebans, and acted with great zeal and courage in defence of their liberties. He was at last taken prisoner by Demetrius, who made him governor of Thespia.

PISISTRATIDÆ, the two sons of Pisistratus, viz. Hipparchus and Hippias, who rendered themselves as illustrious as their father; but the flames of liberty were too powerful to be extinguished. The Pisistratidæ governed with great moderation, but the name of tyrant or sovereign was insupportable to the Athenians. Of the conspiracy of HARMODIUS and ARISTOGITON against them, and the murder of Hipparchus, a full account is given under ATTICA; § 10. Hippias was at last expelled by the united efforts of the Athenians and their allies.

allies. The rest of the Pisistratidæ followed him in his banishment; and after they had refused to accept the liberal offers of the princes of Thessaly and the king of Macedonia, who wished them to settle in their respective territories, they retired to Sigæum, which their father had, in the summit of his power, conquered and bequeathed to his posterity. After the banishment of the Pisistratidæ, the Athenians became uncommonly jealous of their liberty, and often sacrificed the best of their citizens, to their jealousy of the influence which popularity and liberality might gain among a fickle and unsettled populace. (See PHOCION.) The Pisistratidæ were banished from Athens about 18 years after the death of Pisistratus.

PISISTRATUS, an Athenian, who early distinguished himself by his valour in the field, and by his address and eloquence at home. After he had rendered himself the favourite of the populace by his liberality, and by the intrepidity with which he had fought their battles, particularly near Salamis, he resolved to make himself master of his country. Every thing seemed favourable to his ambitious views; but Solon alone opposed him, and discovered his duplicity before the public assembly. Of the various arts he adopted to attain the supreme power; and of his success, and repeated expulsions and restoration, a particular account is given under ATTICA, § 8. and 9. Upon his being the third time received by the people of Athens as their sovereign, he sacrificed to his resentment the friends of Megacles, but did not lose sight of the public good; and while he fought the aggrandizement of his family, he did not neglect the dignity and the honour of the Athenian name. He died about A. C. 528, after he had enjoyed the sovereign power at Athens for 33 years, and was succeeded by his son Hipparchus. Pisistratus claims our admiration for his justice, his liberality, and his moderation. Even when he had the supreme power, he often refused to punish the insolence of his enemies. In short, had he been born to the power he usurped, he would have been a most respectable character; but the utmost justice and moderation in government can never vindicate the crime of *usurpation*.—It is to his labours, however, that we are indebted for the preservation of the poems of Homer; and he was the first, according to Cicero, who introduced them at Athens in the order in which they now stand. He also established a public library at Athens; and the valuable books which he had diligently collected were carried into Persia when Xerxes made himself master of Athens.

PISKOI, a town of Russia, in Archangel, on the Melen; 188 miles E. of Archangel.

(1.) * PISMIRE. *n. f.* [*myra*, Sax. *pismeire*, Dutch.] An ant: an emmet.—

His cloaths, as atoms might prevail,

Might fit a *pisimire* or a whale.

Prior.

—Prejudicial to fruit are *pisimires*, caterpillars, and mice. *Mort.*

(2.) PISMIRE. are a kind of insects very common in Africa; of which there is so great a variety, and such innumerable swarms, that they destroy not only the fruits of the ground, but even men and beasts, in so short a time as one single night; and would, without all doubt, prove more

fatally destructive to the inhabitants, were they not so happily destroyed by a proportionable number of monkeys, who greedily *ferret* and devour them. For a further account of these insects, see ANT, FORMICA, and TERMES. As for locusts and some other grievous plagues with which the far greater part of the vast continent of Africa is afflicted, but which do not belong to this genus, see GRYLUS, N° II. § iv.

PISO, the hereditary cognomen of a branch of the illustrious Roman family of the *Calpurnii* or *CALPURNII*, which produced many great men during the republic, as well as some infernal villains. We subjoin a specimen of both classes.

(1.) PISO, Lucius Calpurnius, surnamed *Frugi* on account of his frugality, was tribune of the people, A. A. C. 149, and afterwards consul. During his tribuneship he published a law against extortion, entitled *Lex Calpurnia de pecuniis repetundis*. He happily ended the war in Sicily. To reward the services of one of his sons, who had distinguished himself in that expedition, he left him by his will a golden crown, weighing 20 pounds. Piso joined to the qualities of a good citizen the talents of a lawyer, an orator, and historian.

(2.) PISO, Caius Calpurnius, a Roman consul, who, in the year 67 before Christ, was author of the law which forbid canvassing for public offices, entitled *Lex Calpurnia de ambitu*. He displayed all the firmness worthy of a consul in one of the most stormy periods of the republic; and by his determined resolution, prevented the people from raising Marcus Calpurnius, a man of no merit, to the consular dignity.

(3.) PISO, Cneius Calpurnius, was consul in the reign of Augustus, and governor of Syria under Tiberius, whose confidant he was. It is said, that by the order of this emperor he caused Germanicus to be poisoned. Being accused of that crime, and seeing himself abandoned by every body, he laid violent hands on himself A. D. 20. He was a man of insupportable pride and excessive violence. Of his many instances are recorded, but the following is the most extraordinary, and horrible. Having ordered a soldier to be executed, because he had gone out of the camp with another soldier and returned without him, the other soldier presented himself to the centurion, who, finding he was not murdered, stopt the execution; and all three went to Piso, amidst the joyful applause of the whole army. Whereupon Piso put a stop to their joy, by ordering all three to be put to death.

(4.) PISO, Lucius, a Roman senator, who attended the emperor Valerian in his unfortunate expedition into Persia (see PERSIA, § 16.), and, after his capture or death, proclaimed himself emperor; but was defeated, taken prisoner, and put to death by Valens, A. D. 261.

PISOGNE, a town of Italy, in the department of Mincio, district and late duchy of Verona, with a harbour on the north bank of Lake Isco, containing about 2000 citizens, who have three iron foundries, with many iron forges, and carry on a very active trade. *Openheim.*

PISON, in ancient geography, the first of the four rivers that watered the garden of Eden, which Moses describes as "encircling the whole land

of Havilah, where there is gold," &c. (Gen. ii. 1, 12.) Some suppose the Pison to be the Ganges; others, particularly Calmet and Reland take it to be the PHASIS, which runs north through COLCHIS (which they suppose to be *Lavilah*), from near the head of the Euphrates to its exit in the Euxine Sea; but these great commentators are evidently mistaken, for the Phasis, instead of rising near the head of the Euphrates, and running NW. has its source about 150 miles N. of the head of the Euphrates, and runs SW. into the Euxine. The conjecture of Bochart and others appears to be more probable, that the Pison is the W. branch of the divided streams of the Tigris and Euphrates, which runs along the side of Havilah in Arabia, and encompasses an extensive territory.

PISONIA, in botany, *FIMBRICIO*, a genus of the dicoccia order, belonging to the polygamia class of plants.

*PISS. *n. f.* [from the verb.] Urine; animal water.—It would vex one more to be knocked on the head with a *pis*-pot than a thunder-bolt. *Pope*.

* To Piss, *v. a.* [*pisser*, Fr. *pisfen*, Dutch.] To make water.—I charge the *pis*ing conduit run nothing but claret. *Shak.*—One piss *pis*ses, the rest *is* for company. *L'Estrange*.

Once posses'd of what with care you save,
The wanton boys would *pis*s upon your grave.
Dryden.

PISSA, a town of Prussian Lithuania; four miles south of Stallaporen.

(1.) *PISSABED. *n. f.* A yellow flower growing in the grass.

(2.) PISSABED, in botany. See *LEONTODON*.

PISSASFALTO, a mountain in BUA.

PISSASPHALTUM, EARTH PITCH; a fluid, opaque, mineral body, of a thick consistence, strong smell, readily inflammable, but leaving a residuum of greyish ashes after burning. It arises out of the cracks of the rocks, in several places on the island of Sumatra, and some other places in the East Indies, where it is much esteemed in paralytic disorders. There is a remarkable mine of it in the island of BUA, of which a curious description is given by Abbe Fortis, for which we refer to his work. It is a species of petroleum. See *MINERALOGY*, Part II. Chap. VI. Gen. III. p. 2.; and *PETROLEUM*, § III. Abbe Fortis says, that the pissasphaltum of Bua is correspondent to that fossil production, which, by Hasselquist, in his travels, is called MUMIA MINERALE, and MUMIA NATIVA PERSIANA by Kæmpfer, which the Egyptians made use of to embalm their kings. It is found in a cave of Mount Caucasus, which is kept shut, and carefully guarded by order of the king of Persia. "Mumiabi, or native Persian mummy (says Kæmpfer) proceeds from a hard rock in very small quantity. It is a bituminous uice, that transudes from the stony superficies of the hill, resembling in appearance coarse shoemakers wax, as well in its colour as in its density and ductility. While adherent to the rock it is soft solid, but is formed by the warmth of the sands. It is easily united with oil, but repels water; it is quite void of smell, and very like in substance to the Egyptian mummy. When laid on burning coals, it has the smell of sulphur tempered

a little with that of naphtha, not disagreeable. There are two kinds of this mummy; the one is valuable for its scarcity and great activity. The native place of the best mummy is far from the access of men, from habitations, and from springs of water, in the province of Daraab. It is found in a narrow cave, not above two fathoms deep, cut like a well out of the mass, at the foot of the ragged mountain Caucasus." *Kæmpfer Ament. Pers.* This description agrees perfectly with the pissasphaltum, or fossil mummy of Bua, differing only in the privation of smell, which perhaps is not totally wanting in the Persian mummy. One of the qualities assigned by M. Linnæus to the finest bitumen is to smoke when laid on the fire, as ours does, emitting a smell of pitch not disagreeable. He believes it would be very good for wounds, as the oriental mumia is, and like the pitch of Castro, which is frequently used by the Roman surgeons for fractures, contusions, and in many external applications.

*PISSBURNT. *adj.* Stained with urine.

PISSLEZUM INDICUM, *Barbadoes Tar*; a mineral fluid of the nature of the thicker bitumens, and of all others the most approaching, in appearance, colour, and consistence, to the true PISSASPHALTUM, but differing from it in other respects. It is very frequent in many parts of America, where it is found trickling down the sides of mountains in large quantities, and sometimes floating on the surface of the waters. It has been greatly recommended internally in coughs and other disorders of the breast and lungs. See *PETROLEUM*, N° 2, § I.

PISSER, a mountain of Germany, in Tyrol, four miles SE. of Landeck.

PISSIRUS, a town of Thrace, near the banks of the Nessus. *Herodot.* vii. c. 109.

PISSOS, a town of France, in the department of the Landes; 27 miles NW. of Tartas.

PISS-POT, a bay on the S. coast of the Straits of Magellan; 24 miles W. by N. of Cape Notch. Lon. 75. 12. W. Lat. 53. 14. S.

(1.) *PISTACHIO. *n. f.* [*pisstache*, Fr. *pisstachi*, Italian; *pisbachia*, Lat.] The pistachio is of an oblong figure, pointed at both ends about half an inch in length, the kernel is of a green colour and a soft and unctuous substance, much like the pulp of an almond, of a pleasant taste; *pisstachios* were known to the ancients, and the Arabians call them *pestuch* and *sestuch*, and we sometimes *pisstich* nuts. *Hill.*—*Pisstachios*, so they be good, and not musty, joined with almonds, are an excellent nourisher. *Bacon*.

(2.) PISTACHIO, or PISTACHIA. See *PISTACIA*.

(1.) PISTACIA, TURPENTINE-TREE, *Pisstachia nut* and *Mastich tree*; a genus of the pentandria order, belonging to the dicoccia class of plants; and in the natural method ranking in the 50th order, *Amentaceæ*. There are nine species, of which the most remarkable are,

1. PISTACIA LENTISCUS, the common *mastich tree*, grows naturally in Portugal, Spain, and Italy. Being an evergreen, it has been preserved in this country, in order to adorn the green-houses. In the countries where it is a native it rises to the height of 18 or 20 feet, covered with a grey bark

on the stem; but the branches, which are very numerous, are covered with a reddish-brown bark, and are garnished with winged leaves, composed of three or four pair of small spear-shaped lobes, without an odd one at the end. This species is commonly propagated by laying down the branches, though it may also be raised from the seed in the manner directed for the pistachia nut-tree (see N^o 3.), and in this manner also may the true mastich tree be raised; but, this being more tender than any of the other sorts, requires to be constantly sheltered in winter, and to have a warm situation in summer. Pistachia nuts are moderately large, containing a kernel of a pale greenish colour, covered with a reddish skin. They have a pleasant, sweet, unctuous taste, resembling that of almonds; and they abound with a sweet and well-tasted oil, which they yield in great abundance on being pressed after bruising them; they are reckoned amongst the analeptics, and are wholesome and nutritives, and are by some esteemed very proper to be preferred by way of rectoratives, eaten in small quantity, to people emaciated by long illness.

(2.) *PISTACIA ORIENTALIS*, the true mastich tree of the Levant, from which the mastich is gathered, has been confounded by most botanical writers with the common mastich tree, above described, though there are considerable differences between them. The bark of the tree is brown; the leaves are composed of two or three pairs of spear-shaped lobes, terminated by an odd one; the outer lobes are the largest; the other gradually diminish, the innermost being the least. The turn of a brownish colour towards the autumn, when the plants are exposed to the open air; but if they are under glasses, they keep green. The leaves continue all the year, but are not so thick as those of the common sort, nor are the plants so hardy.

(3.) *PISTACIA TEREBINTHUS*, the pistachia tree, grows naturally in Arabia, Persia, and Syria, whence the nuts are annually brought to Europe. In those countries it grows to the height of 25 or 30 feet; the bark of the stem and old branches is of a dark russet colour, but that of the young branches is of a light brown. These are garnished with winged leaves, composed sometimes of two, at other times of three, pair of lobes, terminated by an odd one; these lobes approach towards an oval shape, and their edges are turned backward; and these when bruised, emit a smell similar to that of the shell of the nut. Some of these trees produce male and others female flowers, and some have both male and female on the same tree. The male flowers come out from the sides of the branches, in loose bunches or catkins. They have no petals, but five small stamina crowned by large four-cornered summits filled with farina; and when this is discharged, the flowers fall off. The female flowers come out in clusters from the sides of the branches; they have no petals, but a large oval germen supporting three reflexed styles, and are succeeded by oval nuts. This species is propagated by its nuts, which should be planted in pots filled with light kitchen-garden earth, and plunged into a moderate hot-bed to bring up the plants; when these appear, they should have a

large share of air admitted to them, and by degrees they should be exposed to the open air, which at last they will bear in all seasons, though not without great danger of being destroyed in severe winters.

(II.) *PISTACIA TREE BLACK*. See *HAMAMELIS*.

* *PISTE*. *n. f.* [French.] The track or tread a horseman makes upon the ground he goes over.

PISTIA, in botany, a genus of the hexandria order, belonging to the gynandria class of plants, and in the natural method ranking in the 54th order, *Miscellanea*.

PISTIL, *n. f.* among botanists, the little upright column which is generally found in the centre of every flower. According to the Linnæan system, it is the female part of generation, whose office is to receive and secrete the pollen, and produce the fruit. It consists of three parts, viz. germen, stylus, and stigma. See *BOTANY*, *Index*.

* *PISTILLATION*. *n. f.* [*pistillum*, Lat.] The act of pounding in a mortar.—The best diamonds we have are comminable, and so far from breaking hammers, that they submit unto *pistillation*, and resist not an ordinary pestle. *Brown*.

PISTILLUM. See *BOTANY*, *Index*.

(1.) *PISTOIA*, a city of Italy, in Etruria, situated on the Stella, in a beautiful and fertile plain near the foot of the Appennine mountains. By Pliny it is called *Pistorium*, and is said to have been once a Roman colony. At present it is a bishop's see, suffragan of Florence. The streets are broad and regular, the houses tolerably well built, but poorly inhabited for want of trade. Formerly it was an independent republic, but since it was subdued by the Florentines in 1200, it has been in a declining condition. The cathedral has a very handsome cupola, and a magnificent stair-case to ascend to it. In the chapel dedicated to St James, where his relics are preserved, the walls are almost covered with plates of silver. Here are four marble statues of very good workmanship. The marble pulpit, the basso-relievos, the vessel that holds the holy water, and the square steeple, are the work of John Pisano. There is a fine ci-devant Jesuits college, and the Franciscans, Dominicans, and Augustinians, have good churches. In the church of Madonna dell' Umilta there are statues of Leo X. and of Clement VII. The palace, situated in a large square is a handsome building; several of the nobility have also very good houses. It is about 20 miles NW. of Florence, and 30 NE. of Pisa. Lon. 11. 29. E. Lat. 43. 55. N.

(2.) *PISTOIA MOUNTAINS*, mountains near Pistoia, a part of the Appennines. There are several villages on them. The chief is St Marcello.

(1.) * *PISTOL*. *n. f.* [*pistole*, *pistolet*, Fr.] A small handgun.—Three watch the door with *pistols*, that none should issue out. *Shak*.—The whole body of the horse passed within *pistol*-shot of the cottage. *Clarendon*.—Quicksilver discharged from a *pistol* will hardly pierce through a parchment. *Brown*.—A woman had a tubercle in the great canthus of the eye, of the bigness of a *pistol* bullet. *Wiscman*.—

How Verres is less qualified to steal,
With sword and *pistol*, than with wax and seal.

Young.

(2.) *PISTOL*, the smallest piece of fire-arms, borne

orne at the saddle-bow, on the girdle, and in the socket. The barrel is generally 14 inches long. Pistol barrels are forged in one piece, two at a time, joined by their muzzles, and are bored before they are cut asunder; whereby there is a saving of time and labour, and a greater certainty of the bore being the same in both. The method of welding, boring, polishing, &c. is the same with that of guns. See *MUSKET*, § 6, 7.

(3.) *PISTOL-BAY*, a bay at the north extremity of Newfoundland.

* *To PISTOL*. *v. a.* [*pistol*, Fr.] to shoot with pistol.

(1.) * *PISTOLE*. *n. f.* [*pistole*, Fr.] A coin of many countries, and many degrees of value.—I shall disburden him of many hundred *pistoles*. *Jorden*.

(2.) *PISTOLE*, a gold coin, struck in Spain and several parts of Italy, Switzerland, &c. The pistole has its augmentations and diminutions, which are quadruple pistoles, double pistoles, and half pistoles. See *MONEY*, § 9.

* *PISTOLET*. *n. f.* [diminutive of *pistol*.] A little pistol.—

Those unlickt bear-whelps, unfild *pistoles*,
That, more than cannon-shot, avails or lets.

Donne.

(1.) * *PISTON*. *n. f.* [*piston*, Fr.] The moveable part in several machines; as in pumps and syringes, whereby the suction or attraction is caused; in embolus.

(2.) *Piston*, in pump-work, is a short cylinder of metal or other solid substance, fitted exactly to the cavity of the barrel or body of the pump. See *HYDROSTATICKS*, Sec. VII.—X.

PISTORIA, or *PISTORIUM*, in ancient geography, a town of Etruria, at the foot of the Apennines, memorable for the defeat of Catiline; now called *PISTOIA*.

PISTORINE, a Spanish coin. See *MONEY*, § 9.

PISTORIUS, John, M.D. and D.D. was born at Nidda, in 1546. He studied medicine, and was admitted M.D. with applause; but his prescriptions not being attended with success, he quitted that profession, and studied the law. His merit procured him the appointment of counsellor to Ernest Frederick margrave of Baden-Dourlach. He had embraced the Protestant religion; but some time after returned to the communion of the church of Rome. He became afterwards one of the emperor's counsellors, provost of the cathedral of Breilaw, and domestic prelate to the abbot of Fulda. He wrote, 1. Several Controversial Tracts against the Lutherans. 2. *Artis Cabalificæ Scriptores*, printed at Basle, 1587; a scarce and curious collection. 3. *Scriptores rerum Polonicarum*. 4. *Scriptores de rebus Germanicis*, in 3 vols. folio, from 1603 to 1613. This is a curious and scarce performance. The author died in 1608, aged 52.

PISTOYA. See *PISTOIA*.

PISTRINA, a town of Servia, 48 miles SW. of Nissa, and 100 E. of Ragusa.

PISTRITZER, a river of Upper Saxony, which runs into the Elbe, near the Wittenberg.

PISUERGA, a river of Spain, which rises in the N. part of Old Castile, and runs into the Duero, 10 miles SW. of Valladolid.

PISUM, *PEASE*; a genus of the decandria order, belonging to the diadelphia class of plants, and in the natural method ranking under the 32d order, *Papilionacea*. The species are;

1. *PISUM AMERICANUM*, commonly called *Cape-Horn pea*, with an angular trailing stalk, whose lower leaves are spear-shaped, sharply indented, and those at the top narrow pointed.

2. *PISUM HUMILE*, the *dwarf pea*, with an erect branching stalk and leaves having two pair of round lobes.

3. *PISUM MARITIMUM*, the *sea pea*, with foot-stalks which are plain on their upper side, an angular stalk, narrow pointed stipulæ, and foot-stalks bearing many flowers.

4. *PISUM OCHRUS*, with membranaceous running foot-stalks, having two leaves and one flower upon a foot-stalk.

5. *PISUM SATIVUM*, the *greater garden pea*, whose lower stipulæ are roundish, indented, with taper foot-stalks, and many flowers on a foot stalk. There is a great variety of garden pease now cultivated in Britain, which are distinguished by the gardeners and seedsmen; and have their different titles; but as great part of these have been seminal variations, so if they are not very carefully managed, by taking away all those plants which have a tendency to alter before the seeds are formed, they will degenerate into their original state; therefore all those persons who are curious in the choice of their seeds, look carefully over those which they design for seeds at the time when they begin to flower, and draw out all the plants which they dislike from the other. This is what they call *roguing their pease*; meaning hereby the taking out all the bad plants from the good, that the farina of the former may not impregnate the latter; to prevent which, they always do it before the flowers open. By thus diligently drawing out the bad, reserving those which come earliest to flower, they have greatly improved their pease of late years, and are constantly endeavouring to get forwarder varieties; so that it would be to little purpose in this place to attempt giving a particular account of all the varieties now cultivated; therefore we shall only mention the names by which they are commonly known, placing them according to their time of coming to the table, or gathering for use: 1. *The golden botspur*. 2. *The Charlton*. 3. *The Reading hotspur*. 4. *Master's hotspur*. 5. *Essex hotspur*. 6. *The dwarf pea*. 7. *The sugar pea*. 8. *Spanish Morotto*. 9. *Nonpareil*. 10. *Sugar dwarf*. 11. *Sickle pea*. 12. *Marrowsfat*. 13. *Roze or crown pea*. 14. *Rouncival pea*. 15. *Grey pea*. 16. *Pig pea*; with some others.

6. *PISUM UMBELLATUM*, the *rose or crown pea*, with 4 pointed acute stipuli, and foot-stalks bearing many flowers, which terminate the stalks.

PISUS, the son of Perieres, and grandson of Æolus, the founder of PISA. *Pauf*. 15.

* *PIT*. *n. f.* [*pit*, Saxon.] 1. A hole in the ground.—

Tumble me into some loathsome *pit*. *Shak.*
Our enemies have beat us to the *pit*. *Shak.*
—*Pits* upon the sea-shore turn into fresh water, by percolation of the salt through the sand; but in some places of Africa, the water in such *pits* will

E e e e 2

will become brackish again. *Bacon.* 2. Abyss; profundity.—

From the *pit* of Acheron
Meet me i' th' morning. *Shak.*

Into what *pit* thou seest
From what height fallen. *Milton.*

3. The grave.—Left I become like them that go down into the *pit*. *Psal.* xxviii. 1. 4. The area on which cocks fight; whence the phrase, to fly the *pit*.—

Make him glad, at least, to quit
His victory, and fly the *pit*. *Hudibras.*

—They managed the dispute as fiercely, as two game-cocks in the *pit*. *Locke.* 5. The middle part of the theatre.—

Let Cully, Cockwook, Fopling, charm the *pit*.
And in their folly shew the writers wit. *Dryd.*

Now luck for us, and a kind hearty *pit*. *Dryd.*

6. [*Pit*, *peis*, old Fr. from *peisur*, Lat.] Any hollow of the body; as, the *pit* of the stomach; the arm *pit*. 7. A dint made by the finger. 8. A mark by a discale.

* To *PIT*. *v. a.* 1. To press into hollows.—An anasarca, a species of dropsy, is characterised by the shining and softness of the skin, which gives way to the least impression, and remains *pitted* for some time. *Sharrp.* 2. To mark with small hollows, as by the small-pox.

PITAHAILA, (*Cassia Pitajaya*, Linn. *Syst. Vegetabilium*, *Jacquin Amer.* 151. ed. 2. p. 75 M. E. *Caribogena*), a shrub peculiar to California, is a kind of beech, the fruit of which forms the greatest harvest of the natives. Its branches are finely fluted, and rise vertically from the stem, so as to form a very beautiful top. The fruit is like a horse-chestnut. In some white, in others yellow, and in others red, but always exquisitely delicious, being a rich sweet, tempered with a grateful acid. See CACTUS.

PITANE, in ancient geography, a town of Asia Minor, in Æolia, famous for bricks. *Lucan.* lii. 305.

PITANGUA GUACU. See BEMETRE.

* PITAPAT. *n. f.* (probably from *pas a pas*, or *passe passe*, Fr.) 1. A flutter; a palpitation.—A lion meets him, and the fox's heart went *pitapat*. *L'Estrange.* 2. A light quick step.—Now I hear the *pitapat* of a pretty foot through the dark alley. *Dryden.*

PITAUTS. See BIDALDS.

PITCAIRNE, Archibald, M. D. a most eminent physician and ingenious poet, descended from the ancient family of the Pitcairnes of Pitcairne in Fifeshire. He was born at Edinburgh on the 25th of December 1652. He commenced his studies at Dalkeith; and thence removed to the University of Edinburgh, where he improved himself in classical learning, and completed a regular course of philosophy. The law seems to have been his own choice; and to this science he turned his attention with an ardour peculiar to himself. He pursued it with so much intenseness, that his health began to be impaired. On this account, his physicians advised him to set out for the south of France. By the time he reached Paris, he was happily so far recovered, that he determined to renew his studies; but being informed that there was no able professor of law in that

city, and finding several gentlemen of his acquaintance engaged in the study of physic, he went with them to the lectures, and hospitals, and employed himself in this manner for several months till his affairs called him home. On his return, he applied himself chiefly to the mathematics. His intimacy with Dr D. Gregory, the celebrated mathematical professor, began about this time. Pitcairne's progress in mathematics was rapid, and correspondent to his other pursuits. His improvements on the method of infinite series then adopted, which Dr Wallis of Oxford afterwards published, were a conspicuous and early proof of his abilities in this science. Had Dr Pitcairne continued to prosecute the study of the law, and could he have moulded his principles to the times, the first offices and honours of the state, might have been looked for without presumption as the probable reward of such talents as he possessed. Struck, however, with the charms of mathematical truth; which had been lately introduced into the philosophy of medicine, and hoping to reduce the healing art to geometrical method, he unalterably determined on this less aspiring profession. In Edinburgh, at that time, there was no school, no hospital, no opportunity of improvement but the chamber and the shop. He therefore soon returned to Paris, where he cultivated the object of his pursuit with his natural enthusiasm, and with a steadiness from which he could not be diverted. On the 13th Aug. 1680, he received from the faculty of Rheims, the degree of M. D.; which, on the 7th Aug. 1699, was likewise conferred on him by the university of Aberdeen; both being attended with marks of peculiar distinction. Other medical honours were conferred on him in France and elsewhere; but nothing affords a more unequivocal testimony to his abilities than that which the surgeons of Edinburgh gave, in admitting him, freely and unolicited, a member of their college. None had such opportunities of judging of his merit as a practitioner, and on no physician did they ever bestow the same public mark of respect. Soon after his graduation at Rheims, he returned to Edinburgh; where, on the 19th of November 1681, the Royal College of Physicians was instituted; and his name, among others, graced the original patent from the Crown. In his *Solutio Problematis de Inventoribus*, the treatise above alluded to, he discovers a high degree of medical literature, and makes use of it to vindicate Dr Harvey's claim to the discovery of the circulation of the blood. During his residence in Scotland, his reputation became so considerable, that, in 1692, the university of Leyden solicited him to fill the medical chair then vacant. Such an honourable testimony of respect, from a foreign nation, and from such an university, cannot perhaps be produced in the medical biography of Great Britain. Dr Pitcairne's well known political principles excluded him from promotion at home: he therefore accepted the invitation from abroad; and, on the 26th of April 1692, delivered at Leyden his elegant and masterly inaugural oration: *Oratio, qua ostenditur medicinam ab omni philosophorum secula esse liberam*. He discharged the duties of his office at Leyden so as to answer the most sanguine expectations.

expectations. He taught with a perspicuity and eloquence which met with universal applause. At the same time, he was not more celebrated as a professor than as a practical physician; and notwithstanding the multiplicity of his business in both these characters, he found leisure to publish several treatises on the circulation, and some other of the most important parts of the animal economy. Previously to this he had married a daughter of Col. James Hay of Pitfour, by whom he had two children, who died young. At the close of the session he set out for Scotland, with an intention of returning in time for the succeeding one. On his marrying the daughter of Sir Archibald Stevenson, the object of his journey, her relations would on no account consent to part with him again. He was therefore reluctantly obliged to remain; and he wrote the university a polite apology, which was received with the utmost regret. He even declined the most flattering solicitations and tempting offers to settle in London. Indeed he soon came in to that extensive practice to which his abilities entitled him, and was also appointed titular professor of medicine in the university of Edinburgh. In a science so slowly progressive as that of medicine, Dr Pitcairne did a great deal. By labouring in vain for truth in one road, he saved many the same drudgery, and thereby showed the necessity of another. He not only exploded many false notions of the chemists and Galenists, which prevailed in his time, but many of those too of his own sect. In particular, he showed the absurdity of referring all diseases and their cures, to an alkali or an acid. He refused the idea of secretion being performed by pores differently shaped; Bellini's opinion of effervescences in the animal spirits with the blood, and Borelli's of air entering the blood by respiration. He proved the continuity of the arteries and veins; and seems to have been the first who showed that the blood flows from a smaller capacity into a larger; that the aorta, with respect to the arterial system, is the apex of a cone. In this therefore he may be considered as the latent spring of the discoveries respecting the powers moving the blood. He introduced a simplicity of prescription unknown in pharmacy before his time; and such was the state of medicine in this country, that scarcely have the works of any co-temporary, or preceding author being thought worthy even of preservation. As to the errors of his philosophy, let it be remembered, that no theory has as yet stood the test of many years in an enlightened period. His own hungriness loosely about him; and the present generally received practice, differs from his very little in reality. He treated inflammatory and hemorrhagic diseases by bleeding, purging, and blistering, as has been done uniformly and solely on the different theories since. His method of administering mercury and the bark is observed at this day; and with respect to febrile, nervous, glandular, and dropical affections, they seem to be as often the opprobria of the art now as they were then. Dr Pitcairne was universally considered as the first physician of his time. No one appears ever to have had so much practice in this country, or so many con-

sultations from abroad; and no one from all accounts, ever practised with greater sagacity and success. The emoluments of his profession must have been great; but his charities are known to have been correspondent. The possession of money he postponed to more liberal objects: he collected one of the finest private libraries in the world; which was purchased after his death, by the Czar of Muscovy. Notwithstanding the fatigues he underwent in the exercise of his profession, his constitution was naturally delicate. About the beginning of October 1713, he became affected with his last illness; and on the 23d he died, regretted by science as its ornament, by his country as its boast, and by humanity as its friend. The present noble family of Kelly are his descendants. Some anonymous publications are attributed to Dr Pitcairne, particularly a treatise *De Legibus Historie Naturalis*, &c.; but the only ones he thought proper to legitimate, are his *Dissertationes Medice*, and a short essay *De Salute*.

PITCAIRN-GREEN, a village of Perthshire, in the parish of Redgorton.

PITCAIRN'S ISLAND, an island in the S. Pacific Ocean, 6 or 7 miles long and a broad. It has neither river nor harbour, but high mountains, which are visible at 45 miles distance. All the S. coast is rocky. Lon. 133. 21. W. Lat. 25. 2. 8.

PITCAITHLY. See PITKEATHLY.

(1.) * PITCH. *n. f.* [*pic*, Sax. *pin*, Lat.] 1. The resin of the pine extracted by fire and inspissated. — They that touch *pitch* will be defiled. *Prov.*

A rainy vapour

Comes on as blacke as *pitch*. *Chapman.*
—Of air and water mixed together, and consumed with fire, is made a black colour; as in charcoal, oil, *pitch*, and links. *Peacbam.*

A vessel smear'd round with *pitch*. *Milton.*
2. [From *pitch*, Fr. *Skinner*.] Any degree of elevation or height.—

Weak he makes strong, and strong things does increase,
Till it the *pitch* of highest praise exceed. *Spens.*
How high a *pitch* his resolution soars. *Shak.*
Mount aloft with thy imperial mistress,
And mount her *pitch*. *Shak. T. Andron.*
Between two hawks, which flies the higher *pitch*,

I have perhaps some shallow judgment. *Shak.*
That gratee worke maintaines a *pitch* above
All mortal powers. *Chapman.*
Driv'n headlong from the *pitch* of heav'n,
down

Into this deep. *Milton's Par. Lost.*
—Others expectation was raised to a higher *pitch* than probably it would. *Hammond.*

Cannons shoot the higher *pitches*,
The lower we let down their breeches. *Hudib.*
—Alcibiades was one of the best orators of his age, notwithstanding he lived at a time when learning was at the highest *pitch*. *Addison's Whig Examiner.* 3. Highest rise. Not used.—

A beauty wailing, and distressed widow,
Seduc'd the *pitch* and height of all his thoughts
To base declension. *Shak.*

4. State with respect to lowness or height.—
From this high *pitch* let us descend. *Mil.*

By

By how much from the top of wond'rous glory.

To lowest pitch of abject fortune fall'n. *Milt.*

5. Size; stature.—

That infernal monster—

'Gan high advance his broad discoloured breast Above his wonted pitch. *Spenser.*

It is of such a spacious lofty pitch,

Your roof were not sufficient to contain it. *Shak.*

So like in person, garb and pitch,

'Twas hard to interpret which was which. *Hud.*

6. Degree; rate.—

Mandlaughter shall be held the highest pitch Of human glory. *Milton.*

Our resident Tom

From Venice is come;

Talks at the same pitch,

Is as wise, is as rich. *Denham.*

No pitch of glory from the grave is free.

Waller.

—Evangelical innocence amounts to such a pitch of righteousness, as we call sincerity. *South.*—When the sun's heat is thus far advanced, 'tis but just come up to the pitch of another set of vegetables. *Woodward's Nat. Hist.*

(4.) PITCH (§ 1, def. 1.) is a tenacious oily substance drawn chiefly from pines and firs, and used in shipping, medicine, and various arts: it is more properly tar: inspissated by boiling it over a slow fire. See TAR. The best black pitch is made of the refuse of rosin and turpentine, such as will not pass through the straw filter, and the cuttings around the incision on the tree. These materials are put into a boiler 6 or 7 feet in circumference, and 8 or 10 feet high. Fuel is laid around the top; and the materials, as they melt, flow through a channel cut in the fire-place into a tub half filled with water. It is then very red and almost liquid. To give this a proper consistence, it is put in a cauldron placed in a furnace, and boiled down in the same manner as rosin, but it requires much less precaution and double the time. It is then poured into moulds of earth, and forms the best black pitch.

(3.) PITCH, BASTARD, a mixture of colophony, black pitch, and tar. They are boiled down together and put into a barrel of pine wood, forming, when mixed in equal portions, a very liquid substance called in France *bray gras*. If it is desired of a thicker consistence, a greater proportion of colophony is added, and it is cast into moulds.

(4.) PITCH, FOSSIL, or } See MINERALOGY.

(4.) PITCH, MINERAL. } Part II. Chap. VI.

Gen. III. Sp. 4. and PETROLEUM.

(5.) PITCH STONE. See MINERALOGY, Part II. Chap. IV. Class I. Ord. 1. Gen. II. Sp. 5.

(1.) * To PITCH. *v. a.* preterite *pitched*, participle *pitched*, anciently *piht*. See FIGHT. [*appicare*, Italian.] 1. To fix; to plant.—

On Dardan plains the Greeks do pitch

Their brave pavilions. *Shak. Troil. and Cress.*

Sharp stakes, plucked out of hedges,

They pitched in the ground. *Shak. Henry VI.*

He counselled how to hunt his game,

What dart to cast, what net, what toil to pitch.

Fairfax.

Mahometes pitched his tents in a little meadow.

Knolles.

When the victor.

Had conquer'd Thebes, he pitch'd upon the plain

His mighty camp! *Dryden's Night's Tale.*

To Chaffis' pleasing plains he took his way,

There pitch'd his tents. *Dryden.*

Their proud foes in pitch'd pavilions lay.

Dryden.

2. To order regularly.—He describeth the manner how to pitch a field. *Hooker.*—One pitched battle would determine the fate of the Spanish continent. *Addison.* 3. To throw headlong; to cast forward.—

They'll not pitch me i' th' mire. *Shak. Temp.*

—They would wrestle, and pitch the bar for a whole afternoon. *Spektator.* 4. To smear with PITCH. [*picco*, Lat. from the noun.]—

The pitched vessels glide with easy force. *Dryd.*—Some pitch the ends of the timber in the walls, to preserve them from the mortar. *Moxon's Mechan. Ex.*—I pitched over the convex very thinly, by dropping melted pitch upon it. *Newton's Opticks.* 5. To darken.—

The air hath starv'd the roses in her cheeks, And pitch'd the lily tincture of her face. *Shak.*

Soon he found

The welkin pitch'd with sullen cloud. *Addison.*

6. To pave. *Ainsworth.*

(2.) * To PITCH. *v. n.* 1. To light; to drop. —Take a branch of the tree whereon they pitch, and wipe the hive clean. *Mortimer.* 2. To fall headlong.—

Forward he flew, and pitching on his head, He quiver'd with his feet; and lay for dead.

Dryden.

3. To fix choice; with upon.—

They're all alike, yet we shall pitch On one that fits our purpose. *Hudibras.*

—A free agent will pitch upon such a part in his choice. *More.*—I pitched upon this consideration that parents owe their children spiritual contribution to their mind. *Digby.*—The covetous man came by degrees to pitch upon one thing after another. *L'Estrange.*—Pitch upon the best course of life, and custom will render it the most easy. *Tillotson.*—I translated Chaucer, and amongst the rest pitched on the wife of Bath's tale. *Dryden.* 4. To fix a tent or temporary habitation.—They pitched by Emmaus in the plain. *1 Mac. iii. 46.*

* FITCHER. *n. f.* [*pitcher*, French.] 1. An earthen vessel; a water pot.

With sudden fear her pitcher down she threw And fled away. *Spenser.*

Pitchers have ears, and I have many servants. *Shak.*

We read of kings, and gods, that kindly took

A pitcher, fill'd with water, from the brook. *Carver.*

—Pyreus was only famous for counterfeiting all base things; as earthen pitchers and a scullery. *Placcham on Drawing.*

Hylas may drop his pitcher, none will cry.

Dryden.

2. An instrument to pierce the ground in which any thing is to be fixed.—To the hills poles must be set deep in the ground, with a square iron pitcher or crow. *Mort. Hufo.*

* PITCHFORK.

* **PITCHFORK**. *n. f.* [*pitch* and *fork*]. A fork with which corn is thrown upon the waggon.—An old lord in Leicestershire amused himself with needling *pitchforks* and spades. *Saunders*.

* **PITCHINESS**. *n. f.* [*from pitch*]. Blackness; larkness.

PITCHING, *n. f.* in sea-affairs, may be defined the vertical vibration which the length of a ship makes about her centre of gravity; or the movement by which she plunges her head and after-part alternately into the hollow of the sea. This motion may proceed from two causes: the waves which agitate the vessel; and the wind upon the sails, which makes her stoop to every blast thereof. The first absolutely depends upon the agitation of the sea, and is not susceptible of inquiry; and the second is occasioned by the inclination of the masts, and may be submitted to certain established maxims. When the wind acts upon the sails, the mast yields to its effort, with an inclination which increases in proportion to the length of the mast, to the augmentation of the wind, and to the comparative weight and distribution of the ship's lading. The repulsion of the water, to the effort of gravity, opposes itself to this inclination, or at least sustains it by as much as the repulsion exceeds the momentum, or absolute effort of the mast, upon which the wind operates. At the end of each blast, when the wind suspends its action, this repulsion lifts the vessel; and these successive inclinations and repulsions produce the movement of pitching, which is very inconvenient; and, when it is considerable, will greatly retard the course, as well as endanger the mast, and strain the vessel.

* **PITCHY**. *adj.* [*from pitch*]. 1. Smear'd with pitch.—

The planks, their *pitchy* cov'rings wash'd away.

Now yield.

Dryden.

2. Having the qualities of pitch.—Native petroleum is no other than this very *pitchy* substance, drawn forth of the strata by the water. *Woodward on Fossils*. 3. Black; dark; dismal.—

Night is fled,

Whose *pitchy* mantle over-veild'd the earth. *Shak.*

I will sort a *pitchy* day for thee. *Henry VI.*

Pitchy and dark the night sometimes appears.

Prior.

(1.) * **PITCOAL**. *n. f.* [*pit* and *coal*]. Fossile coal.—The best fuel is peat, the next charcoal made of *pitcoal* or cinders. *Mort. Hauff*.

(2.) **PIT-COAL**, or **STONE COAL**. See **CHEMISTRY**, *Index*; **COAL**, **LITHANTHRAX**, **MINERALOGY**, *Part II. Chap. VI. Gen. IV. Part III, Chap. III.* and **XYLANTHRAX**. Mr Bertrand reduces all kinds of coals to six general classes, *viz.* 1. Lithanthrax ligneus; 2. Petrofus; 3. Terrestris; 4. Piccus; 5. Fossilis; 6. Mineralisatus. He says, that the Scots coals are heavier, and burn not so well as those of Newcastle; that those of Liege burn quicker; and those from Brassac in Auvergne, and from La Fosse, burn with a more agreeable flame, &c. But Mr Morand, in his *Nomenclature Raisonnée*, distributes all sorts of pit-coals into 4 classes: In the first he places nine varieties, beginning with the *gagas* or *jucinum nigrum*, to the

variegated lithanthrax; in the second he reckons 7 varieties, beginning with the *lithanthrax eleganti fructura*, to that *facie granulata*; and he forms the 4th class with the earthy and poorer kinds of fossile coals. He seems, however, to have been puzzled with the stony coals, as he ranges them in a separate class, perhaps to shelter himself from the critical objections of those numerous superficial naturalists, who only look for the apparent configuration, without almost any regard to the component parts of fossils. The coal-trade is of infinite importance to Great Britain, which never could have arrived at its present commercial eminence without it; and this eminence it will be impossible to retain if coal should ever become scarce. This we trust is not likely to be the case, though Mr Williams expresses great fears for it, and informs us that at Newcastle and in many parts of Scotland the mines near the sea are already wasted, the first consequence of which must be an enormous rise in the price. See his observations on this subject in his *Natural History of the Mineral Kingdom*, p. 156, &c. This author says, that coal was not discovered till between the middle of the 11th and beginning of the 13th centuries: it is therefore, according to him, 400 years since it was first discovered in Britain, but they have not been in common use for more than 200 years. The same author gives us many pertinent observations on the appearances and indications of coal, instructions about searching for it, remarks on false and doubtful symptoms of coal; for all which, together with his observations on the different kinds of Scots coal, we refer our readers to the work itself; the first part of which, occupying the largest proportion of the first volume, is upon the *strata of coal*, and on the concomitant strata. See also **COALERY**.

PITEA. See **PITHIA**, No. 1.—4.

PITEOU, an island, near the coast of China. Lon. 137. 0. E. of Ferro. Lat. 25. 20. N.

* **PITEOUS**. *adj.* [*from pity*]. 1. Sorrowful; mournful; exciting pity.—

When they heard that *piteous* strained voice,
In haste forsook their rural merriment. *Spenser*.

The most arch deed of *piteous* massacre,

That ever yet this land was guilty of. *Rich. III.*

Which when Deucalion with a *piteous* look

Beheld, he wept. *Dryden*.

2. Compassionate; tender.—

Piteous transfer it to the mournful swain.

Prior.

She gave him, *piteous* of his case,

A shaggy tap'try. *Pope's Dunciad*.

3. Wretched; paltry; pitiful.—

Piteous amends! uniefs

Be meant our grand foe. *Mil. Par. Lost*.

* **PITEOUSLY**. *adv.* [*from piteous*]. In a piteous manner.—

Ruthful to hear, yet *piteously* perform'd. *Shak.*

* **PITEOUSNESS**. *n. f.* [*from piteous*]. Sorrowfulness; tenderness.

* **PITFALL**. *n. f.* [*pit* and *fall*]. A pit dug and covered, into which a passenger falls unexpectedly.

Poor bird! thou'd'st never fear the net nor lime,

The *pitfall*, nor the gin.

Shak. Macb.

—Thieves

—Thieves dig concealed *pitfalls* in his way. *Sandys*.
—These hidden *pitfalls* were set thick at the entrance of the bridge. *Addison*.

(1.) * *PITH*, *n. f.* [*pitte*, Dutch.] 1. The marrow of the plants: the soft part in the middle of the wood.—If a cion, fit to be set in the ground, hath the *pith* finely taken forth, and not altogether, but some of it left, it will bear a fruit with little or no core. *Bacon's Nat. Hist.*

Her solid bones convert to solid wood,
To *pith* her marrow, and to sap her blood.

Dryden.

2. Marrow.—

As doth the *pith*, which left our bodies slack,
Strings fast the little bones of neck and back;
So by the soul doth death string heav'n and earth.

Donne.

—The vertebrae are all perforated in the middle, with a large hole for the spinal marrow or *pith* to pass along. *Ray*. 3. Strength; force.—*Pith* in Scotland is still retained as denoting strength, either corporeal or intellectual: as, that desies all your *pith*.—

Guarded with grandfires, babies and old women,

Or pass'd, or not arriv'd to *pith* and puissance.

Shak.

Since these arms of mine had seven years *pith*.

Shak.

4. Energy; cogency; fulness of sentiment; closeness and vigour of thought and style. 5. Weight; moment; principal part.—

That's my *pith* of business.

Shak.

Enterprizes of great *pith* and moment.

Shak.

6. The quintessence; the chief part.—

The owner of a foul disease,

To keep it from divulging, lets it feed

Ev'n on the *pith* of life.

Hamlet.

(2.) *PITH*, in vegetation, is the soft spongy substance contained in the central parts of plants and trees.

(1.) *PITHEA*, *PATA*, or *PITEA*, a province of Swedish Lapland, bounded on the N. by Lula, or Lublia; E. by Bothnia, S. by Uhma or Elma, and W. by Norway.

(2.) *PITHEA*, a river which runs across the above province, and falls into the Gulf of Bothnia.

(3.) *PITHEA*, or *PITEA*, the capital of the above province, (Nº 1.) is seated at the mouth of the river, (Nº 2.) on a small island which is joined to the continent by a wooden bridge. It has a good harbour and a school, the streets run in parallel lines, but the church is on the other side of the bridge. It is 80 miles SW. of Tornea. Lon. 22. 40. E. Lat. 65. 12. N.

(4.) *PITHEA*, OLD, a town in the above province, 3 miles above Pithea, which was built by Gustavus Adolphus in 1621, but was totally burnt in 1666; on which the new town (Nº 3.) was built at the mouth of the river. Old Pithea, however, is now a large village, consisting of a great number of houses, scattered irregularly on a fine common.

PITHECUSA, an island of Italy, on the coast of Etruria, anciently called *ÆNARIA*, with a town so named on the top of a mountain. It was subject to earthquakes, and had a volcano; which led mythologists to say, that the giant Typhon was

buried alive under the mountain, and struggled at such times to throw off his burden. *Ovid*, *Plin.* &c.

* *PITHILY*, *adv.* [from *pithy*.] With strength; with cogency; with force.

* *PITHINESS*, *n. f.* [from *pithy*.] Energy; strength.—No less deserveth his wittiness in devising, his *pithiness* in uttering, his complaint of love, so lovely. *Spenser*.

PITHIVIER, a town of France, in the dep. of the Loire; 21 miles ENE. of Orleans, and 23 NW. of Montargis.

* *PITHLESS*, *adj.* [from *pith*.] 1. Wanting *pith*; wanting strength.—

Weak shoulders over-born with burthening grief

And *pithless* arms.

Shak.

2. Wanting energy; wanting force.

PITHO, in the mythology, the goddess of persuasion among the Romans, the daughter of Mercury and Venus. She was represented with a diadem on her head, to intimate her influence over the hearts of man. One of her arms appeared raised as in the attitude of an orator haranguing in a public assembly; and with the other she holds a thunderbolt and fetters, made with flowers, to signify the powers of reasoning and the attractions of eloquence. A caduceus, as a symbol of persuasion, appears at her feet, with the writings of Demosthenes and Cicero, the two most celebrated orators among the ancients, who understood how to command the attention of their audience, and to rouse and animate their various passions.

PITHOEUS. See *PITHOU*.

PITHOLAUS, and *LYCOPHRON*, two nobles of Phœræ, who killed the tyrant Alexander, and seized the kingdom; but were expelled by Philip II. of Macedon.

PITHOM, one of the cities which the Israelites built for Pharaoh in Egypt (Exod. i. 11.) during their servitude. This is probably the same city with *Pathumus*, mentioned by Herodotus, which he places upon the canal made by the kings Necho and Darius to join the Red Sea with the Nile, and consequently with the Mediterranean. There was an arm of the Nile called *Pathmeticus*, *Phatmicus*, *Phatnicus*, or *Phatniticus*. Bochart says, that Pithom and Raamses are about five leagues above the division of the Nile, and beyond this river: but this assertion has no proof from antiquity. Marsham will have Pithom to be the same as *PELUSIUM* or *DAMIETTA*.

PITHOU, or *PITHOEUS*, Peter, a Frenchman of great literary eminence, descended of an ancient and noble family in Normandy, and born at Troyes in 1539. He first studied at Troyes, and afterwards at Paris, where he became the scholar and friend of Turnebus. Having acquired the languages and belles lettres, he was placed under Cujacius at Bourges to study civil law, and accompanied him to Valence. In 1560, he returned to Paris. In 1563, he published *Adversaria Subjunctiva*, which laid the foundation of that great and extensive fame he afterwards acquired. Soon after this, Henry III. advanced him to some considerable posts; in which, as well as at the bar, he acquitted himself most honourably. Either through these favours or through fear, he abjured the protestant

stant religion, and embraced the catholic. He afterwards attended the duke of Montmorency to England. Henry III. and IV. were greatly obliged to him for combating the League in the most intrepid manner, and for many other services. Pithæus died upon his birth-day in 1596, leaving behind him a wife whom he had married in 1579, and some children. Thuanus says he was the most accomplished man of the age in which he lived. He collected a very valuable library, containing a variety of rare MSS. as well as printed books. He published a great number of works upon law, history, and classical literature; and he gave several new and correct editions of ancient writers. He was the first who made the world acquainted with the Fables of Phædrus; which, together with the name of their author, were utterly unknown and unheard of, till published from a MS. of his.

* **PITHY**, *adj.* [from *pith*.] 1. Consisting of pith.—The *pithy* fibres brace and flitch together the ligneous in a plant. *Grew's Cosmol.*—

The Herefordian plant that likes

T' approach the quince, and th' elder's *pithy* stem. *Philips.*

2. Strong; forcible; energetic.—

Yet she with *pithy* words, and counsel sad,
Still strove their sudden rages to revoke. *Spenser.*

I must begin with rudiments of art,
More pleasant, *pithy*, and effectual,
Than hath been taught by any. *Shak.*

Many rare *pithy* faws concerning
The worth of astrologic learning. *Hudibras.*
This *pithy* speech prevail'd, and all agreed. *Dryden.*

—Goodman Fact was very short, but *pithy*. *Addison.*

PITHYNIA, an ancient name of CHIOS.

PITHYUSA. See MILETUS, N° 2.

PITI, a town of Thibet, 204 miles S. of Latac.

* **PITIABLE**, *adj.* [*pityable*, Fr. from *pity*.] Deserving pity.—The *pitable* persons relieved, are constantly under your eye. *Atterbury.*

* **PITIABLENESS**, *n. f.* [from *pitable*.] State of deserving pity.—For the *pitableness* of his ignorance and unwill'd mistake, his neglect thereof may be excus'd. *Kettlewell.*

* **PITIFUL**, *adj.* [*pity* and *full*.] 1. Melancholy; moving compassion.—Some, who have not deserved judgment of death, have been for their good's sake caught up and carried straight to the bough; a thing indeed very *pitiful* and horrible. *Spenser.*—

A sight most *pitiful* in the meanest wretch,
Fast speaking in a king. *Shak. King Lear.*

All swollen and ulc'rous, *pitiful* to the eye;
The mere despair of surgery he cures. *Shak.*

Will he his *pitiful* complaints renew? *Sandys.*
—Consider what a *pitiful* condition we had been in. *Ray on the Creat.* 2. Tender; compassionate.

Would my heart were flint, like Edward's,
Or Edward's soft and *pitiful*, like mine. *Shak.*

Be *pitiful* to my condemned sons. *Shak.*

3. Paltry; contemptible; despicable.—That's villainous, and shews a most *pitiful* ambition. *Shak.*—One, in a wild pamphlet, besides other *pitiful* malignities, would scarce allow him to be a gentleman. *Wotton.*—This is the doom of fallen man,

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perhaps to spin out his days and himself into one *pitiful* controverted conclusion. *South.*—Sin can please no longer, than for that *pitiful* space of time while it is committing. *South.*—If these *pitiful* shanks were answerable to this branching head, I should defy all my enemies. *L'Estrange.*—What entertainment can be raised from so *pitiful* a machine, where we see the success of the battle from the beginning. *Dryden's Ded. to Jew.*

* **PITIFULLY**, *adv.* [from *pitiful*.] 1. With pity; with compassion.—*Pitifully* behold the sorrows of our hearts. *Comm. Prayer.* 2. Mournfully; in a manner that moves compassion.—

He beat him most *pitifully*. *Shak.*
—When any great event has been upon them, they would sigh and groan as *pitifully* as other men. *Tillotson.* 3. Contemptibly; despicably.—Those men, who give themselves airs of bravery on reflecting upon the last scenes of others, may behave the most *pitifully* in their own. *Clarissa.*

* **PITIFULNESS**, *n. f.* [from *pitiful*.] 1. Tenderness; mercy; compassion.—Basilus giving infinite terms of praises to Zelmene's valour in conquering, and *pitifulness* in pardoning, commanded no more words to be made of it. *Sidney.* 2. Despicableness; contemptibleness.

PITICLIANO, a town and fortress of Etruria, 23 miles ENE. of Orbitello.

PITHEMPO, a mountain of Asia, in Thibet, which bounds that country on the NW.

* **PITILESLY**, *adv.* [from *pitiless*.] Without mercy.

* **PITILESSNESS**, *n. f.* Unmercifulness.

* **PITILESS**, *adj.* [from *pity*.] Wanting pity; wanting compassion; merciless.—

Fair, be ye sure, but proud and *pitiless*,
As is a storm. *Spenser.*

Hadst thou in person ne'er offended me,
Even for his sake am I now *pitiless*. *Shak.*

My chance, I see,
Hath made ev'n *pity pitiless* in thee. *Fairfax.*
Upon my livid lips below a kiss,
Nor fear your kisses can restore my breath;
Even you are not more *pitiless* than death. *Dryden.*

PITISCUS, Samuel, a learned antiquary, born at Zutphen, was rector of the college of that city, and afterwards of St Jerome at Utrecht, where he died; Feb. 1. 1717, aged 90. He wrote, 1. *Lexicon Antiquitatum Romanorum*, in 2 vols. folio; a work which is esteemed. 2. Editions of many Latin authors, with notes; and other works.

PITKEATHLY, or **PITCAITHLY**, a village of Perthshire, in Strathern, in the parish of Dumbarny, about 5 miles SW. of Perth, famous for its mineral waters. The village and the wells are in a situation truly rural and romantic; and the accommodations for the invalids are good. Of the waters, the following account is given by the Rev. Mr David Beaton, in his Statistical Account of the parish: (Vol. VIII. p. 405.)—"The mineral waters of Pitkeathly, which have long been famed for their efficacy in curing or alleviating the scrophula, scurvy, gravel, &c. are situated in this parish. This mineral is gentle in its operation, has an agreeable effect in relieving the stomach of crudities, procuring an appetite, and exhilarating

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the spirits; and, instead of weakening, tends to strengthen the constitution. The water is of a cooling quality, and very efficacious in removing all heat and foulness of the blood. It is used both for drinking and bathing. In some cases the warm bath has the most salutary effect, especially in scrophulous and scorbutic complaints; but should be used with caution, as it tends to weaken, if made too warm, or used too frequently. The time when this mineral was discovered cannot be ascertained; even tradition says nothing of its first discovery. There are five distinct springs, all of the same quality, but of different degrees of strength. In 1771 some experiments were made on one of the mineral springs, by Dr Donald Monro of London, which, in 1772, together with a letter from the late Dr Wood of Perth, on the same subject, were published in the 62d vol. of the *Philos. Trans.* This year (1792) Messrs Stoddart and Mitchel, druggists in Perth, have, with much attention and accuracy, analyzed the several springs. The following table is the result of their experiments:

A TABLE shewing the contents in a wine gallon of each of the mineral waters of the estates of PITKEATHLY and DUMBARNY.

Names of the Waters.

	East Well.	West Well.	Spout Well.	Dumbarney Well.	South Park Well.	
Atmospheric air,	4	4	4	4	4	cubic inch.
Carbonic acid gas,	8	8	6	5	5	
Carbonate of lime,	5	5½	5	5½	5	
Sulphate of lime,	5½	5	3½	3	3	grains.
Muriate of soda,	100	92	82	57	44	
of lime,	180	168	146	102	84	
Specific gravity of a gallon of each more than distilled water,	216	198	172	124	98	

PITLAR, a town of Russia, in Tobolsk.

PITLOCHRY, a village of Perthshire, in Moulin parish, on the road from Perth to Inverness, 6 miles from Killcrankie, containing 160 souls in 1793.

PITLUNDY, a lake of Scotland, in Ross-shire.

* PITMAN. *n. s.* [*pit* and *man*.] He that in sawing timber works below in the pit.—With the piersaw they enter the one end of the stuff, the topman at the top, and the *pitman* under him; the topman observing to guide the saw exactly, and the *pitman* drawing it with all his strength perpendicularly down. *Moxon.*

PITOC, a town of Thibet, 24 m. NW. of Latac.

PITOLO, a town of Italy, in the department of the Mincio, district and late duchy of Mantua; two miles SE. of Mantua.

PITORA, a river of Anossi.

PITOT, Henry, F.R.S. a learned writer, of a noble family in Languedoc, born at Aramont, on the 29th May, 1693. He acquired mathematics without a master, and went to Paris in 1718, where he formed a close friendship with the illustrious Reaumur. In 1724 he was admitted a member of the Royal Academy of Sciences at Paris, and in a few years rose to the degree of a pensioner. Besides a vast number of Memoirs printed in the collection of that society, he published, in 1731, *The Theory of the Working of Ships*, in 1 vol. 4to; a work of considerable merit, which was translated into English, and procured the author to be admitted into the Royal Society of London. In 1740 the states general of Languedoc appointed him their chief engineer, and inspector-general of the canal. That country is indebted to him for several monuments of his genius. He supplied Montpellier with water, by a noble aqueduct. See MONTPELIER. The illustrious Marshal de Saxe was the great patron and friend of Pitot, who had taught this hero the mathematics. In 1735 he married Maria-Leonina Pharambier de Sabbalona, descended of a very ancient noble family of Navarre, by whom he had one son, who was advocate-general of the Court of Accounts, Aids, and Finances of Montpellier. Pitot was a practical philosopher, and a man of uncommon probity and candour. He was also a member of the Royal Society of Sciences of Montpellier. He died at Aramont, 27th December 1771, aged 76.

PITQUIN, a town of Mexico, in New Navarre; 270 miles NW. of Cinaloa.

PITRIOWIN, a town of Poland, in Lublin; 31 miles SW. of Lublin.

PITS, John, a celebrated biographer, born in 1560, at Aulton in Hampshire, and educated at Wykeham's school, near Winchester, till he was 18 years of age, when he was sent to New College in Oxford, and admitted probationer fellow. Having continued in that university near two years, he left the kingdom as a voluntary Romish exile, and retired to Douay; from thence he went to the English college at Rheims, where he remained about a year, and then proceeded to Rome, where he continued a member of the English college near 7 years, and was made a priest. In 1589 he returned to Rheims; and there, during two years, taught rhetoric and Greek. He now quitted Rheims on account of the civil war in France, and retired to Pont a Mousson in Lorraine, where he took the degrees of M. A. and B. D. Hence he travelled into Germany, and resided a year and a half at Triers, where he commenced licentiate. From Triers he visited several of the principal cities in Germany; and continuing three years at Ingolstadt in Bavaria, took the degree of D. D. Thence having made the tour of Italy, he returned once more to Lorraine; where he was patronised by the cardinal of that duchy, who preferred him to a canonry of Verdun; and about two years after he became confessor to the duchess of Cleves, daughter to the Duke of Lorraine. While in this employment, he wrote in Latin the lives of the kings, bishops, apostolical men, and writers of England. The last of these, commonly known and quoted by this title, *De illustribus Anglie scriptoribus*.

was, was published after his death. The three still remain in MS. among the archives of the collegiate church of. Liverdun. The duke of Orleans dying after Pitts had been about 12 years seigneur to the duchess, she returned to Lorraine, attended by our author, who was promoted to deanery of Liverdun, which, with a canonry of officialship, he enjoyed to the end of his life, died in 1616, and was buried in the collegiate church. He is accused of partiality to the French writers.

PIT-SAW. *n. f.* [*pit* and *saw*.] The large saw used by two men, of whom one is in the pit.—The *pit-saw* is not only used by those workmen to saw timber and boards, but is also for small stumps used by joiners. *Maxon's Mechan. Exerc.*

PITSCHEN, a town of Silesia, in Brieg. It was taken by the Poles in 1588; and again sacked in 17 and 1633. It has a college and 2 churches. It is 30 miles NE. of Brieg, and 42 E. of Breslau. Lon. 12. 22. E. Lat. 51. 20. N.

PITSEY, a town of Essex, near N. Benfleet, which gives name to a creek of the Thames.

PITSIE, a town of China, in Koe-tcheou.

PITSLIGO, a parish of Scotland, in Aberdeenshire, of a rectangular form, $\frac{3}{4}$ miles long from N. to W. and 3 broad from the S. to the coast. The eastern extremity lies 2 miles W. of Kinnaird's head, a conspicuous point in Aberdeenshire, where a light-house was lately erected by government. The climate is dry and healthy; the surface is level, the soil on the S. black and light; towards the N. a yellow clay, which produces good crops of barley and beans; but in general is not favourable to oats, excepting in two farms. A plantation of forest trees reared by Sir W. Forbes, by way of experiment, has succeeded well. The population, in 1791, was 1300; the increase 76, in 1795. A considerable quantity of kelp is made upon the coast.

(1.) **PITT**, Christopher, an eminent English poet, celebrated for his excellent translation of Virgil's *Æneid*, was born in 1699. Having studied 4 years at New College, Oxford, he was presented to the living of Pimperne in Dorsetshire, which he held during life. He had so poetical a turn, that he translated Lucan while a boy. Next to his fine translation of Virgil, he gained the greatest reputation by his excellent English translation of Vida's art of poetry. He died in 1643.

(2.) **PITT**, William, earl of Chatham, a most celebrated British statesman and patriot, was born November 1708. He was the youngest son of Robert Pitt, Esq. of Boconnock in Cornwall; and grandson of Thomas Pitt, Esq. governor of Fort George in the East Indies, in the reign of queen Anne, who sold an extraordinary fine diamond to the king of France for 135,000*l.* and thus obtained the name of *Diamond Pitt*. His intellectual faculties and powers of elocution very soon made a distinguished appearance; but at the age of 16 he felt the attacks of an hereditary gout, by which he was tormented at times during the rest of his life. His lordship entered early into the army, and served in a regiment of dragoons. Through the interest of the duchess of Marlborough, he obtained a seat in parliament before he was 21 years

of age. His first appearance in the house was as representative of the borough of Old Sarum, in the 9th parliament of Great Britain. In the 10th he represented Seaford, Aldborough in the 11th, and the city of Bath in the 12th; where he continued till he was called up to the house of peers in 1766. The intention of the duchess in bringing him thus early into parliament was to oppose Sir Robert Walpole, whom he kept in awe by the force of his eloquence. At her death the duchess left him 10,000*l.* on condition, as was then reported, that he never should receive a place in administration. However, if any such condition was made, it certainly was not kept on his lordship's part. In 1746 he was appointed vice-treasurer of Ireland, and soon after paymaster general of the forces, and sworn a privy-counsellor. He discharged the office of paymaster with such honour and inflexible integrity, refusing even many of the perquisites of his office, that his bitterest enemies could lay nothing to his charge, and he soon became the darling of the people. In 1755 he resigned the office of paymaster, on seeing Mr Fox preferred to him. The people were alarmed at this resignation; and being disgusted with the unsuccessful beginning of the war, complained loudly, that, on the 4th December 1756, Mr Pitt was appointed secretary of state in the room of Mr Fox, afterwards Lord Holland; and other promotions were made to second his plans. He then took such measures as were necessary for the honour and interest of the nation; but in February 1757, having refused to assent to the carrying on a war in Germany for the sake of his majesty's dominions on the continent, he was deprived of the seals on the 5th of April following. Upon this the complaints of the people again became so violent, that on the 29th of June he was again appointed secretary, and his friends filled other important offices. The war was now conducted with uncommon success; yet on the 5th Oct. 1761, Mr Pitt, to the astonishment of the public, resigned the seals. The reason was, that Mr Pitt, having received certain intelligence that the family compact was signed between France and Spain, and that the latter was about to join France against us, thought it necessary to prevent her by commencing hostilities first. Having communicated this opinion in the privy council, the other ministers urged that they would think twice before they declared war against that kingdom. "I will not give them leave to think (replied Mr Pitt); this is the time, let us crush the whole house of Bourbon. But if the members of this board are of a different opinion, this is the last time I shall ever mix in its councils." After his resignation in 1761, Mr Pitt never had any share in administration. He received a pension of 3000*l.* a-year, to be continued after his decease, during the surivivancy of his lady and son; and this gratuity was dignified with the title of *Baroness of Chatham* to his lady, and that of *Baron* to her heirs male. Mr Pitt at that time declined a title of nobility; but in 1766 accepted of a peerage under the title of *Baron Pymfret and Earl of Chatham*, and at the same time he was appointed lord privy seal. This acceptance of a peerage proved very prejudicial to his lordship's

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character. However, he continued steadfast in his opposition to the measures of administration. His last appearance in the house of lords was on the 2d of April 1778. He was then very ill, and was supported to his seat by his brother-in-law Lord Mahon and his son William; but the question was important, being a motion of the duke of Richmond to address his majesty to remove his ministers, and make peace with America on any terms. His lordship made a long speech, which had certainly overcome his spirits; for, attempting to rise a second time, he fell down in a convulsive fit, and though he recovered for that time, his disorder continued to increase till the 11th of May, when he died at his seat at Hayes. His death was lamented as a national loss. As soon as the news reached the House of Commons, which was then sitting, Colonel Barre made a motion, that an address should be presented to his majesty, requesting that the Earl of Chatham should be buried at the public expence. But Mr Rigby having proposed the erecting of a statue to his memory, as more likely to perpetuate the sense of his great merits entertained by the public, this was unanimously carried. A bill was soon after passed, by which £4000 a year was settled upon John, now earl of Chatham, and the heirs of the late earl to whom that title may descend.—His lordship was married in 1754 to Lady H. Ester, sister to the earl of Temple; by whom he had three sons and two daughters. The manners of lord Chatham were easy and bland, his conversation was spirited and gay, and he readily adapted himself to the complexion of those with whom he associated. That artificial reserve, which is the never-failing refuge of self-diffidence and cowardice, was not made for him. He was unconstrained as artless infancy, and generous as the noon-day sun; yet had he something impenetrable that hung about him. By an irresistible energy of soul he was haughty and imperious. He was incapable of associating councils, and he was not formed for the sweetest hands of society. He was a pleasing companion, but an unpliant friend. The eloquence of lord Chatham was one of his most striking characteristics. He far outstripped his competitors, and stood alone the rival of antiquity. But his spirit and intrepidity were conspicuous in every action of his life; nor did they leave him to the last. As an instance of his determined resolution, when he had any great national object in view, we shall conclude with one characteristic anecdote:—Preparatory to one of the secret expeditions during the war which ended in 1763, the minister had given orders to the different presiding officers in the military, navy, and ordnance departments, to prepare a large body of forces, a certain number of ships, and a proportionable quantity of stores, &c. and to have them all ready against a certain day. To these orders he received an answer from each of the officers, declaring the total impossibility of a compliance with them. Notwithstanding it was then at a very late hour, he sent immediately for his secretary, and after expressing his resentment at the ignorance or negligence of his majesty's servants, he gave the following commands:—"I desire, Mr Wood, that you will immediately go to Lord Anson; you need not trouble yourself

to search the admiralty, he is not to be found there; you must pursue him to the gaming-house, and tell him from me, that if he does not obey the orders of government which he has received at my hands, that I will most assuredly impeach him. Protect him from him to Lord Ligonier; and though he should be bolstered with harlots, undraw his curtains; and repeat the same message." Then direct your course to Sir Charles Frederick, and assure him, that if his majesty's orders are not obeyed, they shall be the last which he shall receive from me." In consequence of these commands, Mr Wood proceeded to White's, and told his errand to the first lord of the admiralty; who insisted that the secretary of state was out of his senses, and it was impossible to comply with his wishes; "however (added he), as madmen must be answered, tell him that I will do my utmost to satisfy him." From thence he went to the commander in chief of the forces, and delivered the same message. He also said that it was an impossible business; and the secretary knows it (added the old lord); nevertheless, he is in the right to make us do what we can; and what is possible to do, inform him shall be done." The surveyor-general of the ordnance was next informed of Mr Pitt's resolution; and, after some little consideration, he began to think that the orders might be completed within the time prescribed. The consequence at last was, that every thing, in spite of *impossibilities*, was ready at the time appointed.

(3.) PITT, the Right Honourable William, was the second son of the illustrious statesman and patriot whose life and character we have briefly sketched in the preceding article. He was born at Hayes in Kent, on the 28th of May 1759, the memorable year in which the French dominion in North America was destroyed by the directing energy of his father, and the active heroism of General Wolfe. The Earl of Chatham being driven from power at the beginning of the present reign, and disposed to private life by frequent ill health, bestowed much of his time and care on the education of his children. His eldest son was destined for the army, and another, James-Charles, for the navy. The education of these he in a great measure confided to others. William he resolved to make a statesman; and, in the formation of his character, and cultivation of his talents, he was particularly assiduous. His hopes of success were at least equal to his care; for he was accustomed to say, that his "son William would one day increase the glory of the name of Pitt." His classical education was conducted at Burton-Pynsent, the family seat, by a private tutor, Dr Wilson, afterwards a canon of Windsor; while his father took every means in his power, by personal instruction and easy conversation, to expand his mind and mature his judgment. He was particularly anxious to teach him, while yet very young, to speak with elegance and force, and to argue with logical precision; to be elegant, but not superficial, and never to sacrifice the importance of his matter to the ornaments of his diction or the smoothness of his periods. He caused him to declaim from a chair or a table, and engaged him in disputations on the most important

important subjects; pressing him with difficulties, but he might acquire a facility of overcoming opposition, and never allowing him to stop till each subject was exhausted, and every difficulty overcome. Thus he acquired two qualities of the utmost importance in public life; firmness and readiness, a quick and decisive perception, and a ready delivery.

At about fifteen years of age Mr. Pitt was sent to Cambridge, and admitted into Pembroke Hall, under the tuition of Dr. Turner, afterwards master of the college, and dean of Norwich. His private college instructor was Dr. Prettyman (now Tomline), afterwards bishop of Lincoln; to whose care and attention, in his mathematical and classical studies, he is said to have owed much. His conduct at Cambridge was highly exemplary. His rank as a nobleman's son entitled him to take the degree of *M. A. tamquam nobilis*, and therefore exempted him from the exercises and examinations to which those who first go out bachelors in that faculty are subjected. But, though he was thus deprived of the opportunity of displaying his talents in the contest for academical honours, his reputation in the university stood uncommonly high, both for genius, industry, and conduct, and procured him an influence in that learned body of considerable importance to him in after-life. Having left the university, Mr. Pitt was entered a student of Lincoln's Inn about the same time with Mr. Addington (afterwards Lord Sidmouth), whose father was both the friend and physician of his family; and, on account of his degree, he was called to the bar in three years. He went the western circuit, we believe, twice, but had little practice, and acquired no celebrity as a lawyer, for which laborious profession (in which a successful progress is frequently the effect of accident, and is always tedious) he was probably but moderately qualified.

His attention was now directed to that department of general politics for which his education had better fitted him. At the general election in 1780 he was advised to become a candidate for the university of Cambridge; but high as his reputation then was, he had not yet sufficient influence to secure this great object of his ambition. Early in the year 1781 he was, through the influence of the Duke of Rutland, with Sir James Lowther, returned to parliament by the borough of Appleby in Cumberland. His first appearances in parliament all gave the highest promise of his future greatness. He took the side of opposition, both on the subject of reform and of the American war, and eminently distinguished himself among the most illustrious speakers of that remarkable period. Into the various contests, discussions, and changes of this busy time, we mean not, in this place, to enter, and the rather, as the reader, by referring to our history of ENGLAND, will find an account sufficiently copious, both of the public transactions and parliamentary motions and measures of the period. See § 104, and the subsequent sections; see particularly § 112; see also the life of Mr. Fox, N° 1.

In the month of December 1783 William Pitt, not yet twenty-four years of age, was called to

fill the important office of prime minister of Great Britain, as first lord of the treasury, and chancellor of the exchequer. Such had been the vacillation of public parties, and the dissatisfaction with public measures for some time previous, that this, with the other appointments connected with it, was approved by the nation with every expression of joy. The coalition ministry, which Mr. Pitt, and his friends thus displaced, was particularly obnoxious to the nation at large, but it still retained a majority in the house of commons; and, though gradually declining in strength, made many efforts to displace the new ministry. These efforts would probably, in most other circumstances, have been successful, but the youthful premier, supported by the king, the house of peers, and a large majority of the nation, stood undaunted before this formidable opposition in the lower house, and declared himself, with a firmness equally surprising and characteristic, "the minister for the crown, which possessed uncontested power to nominate its own servants." He found himself, however, obliged either to dissolve the parliament, or to form some accommodation with his formidable opponents. He attempted the latter expedient without success, and therefore suddenly adopted the former, on the 25th of March 1784. He was now returned by the university of Cambridge, and found himself, on the meeting of the new parliament, possessed of a triumphant majority in both houses, and supported by as general an expression of national approbation as was ever, in any circumstances, conferred on any minister. See ENGLAND, as above referred to; particularly § 119, &c.

Having now attained, at so early an age, the summit of power and influence, Mr. Pitt exercised his authority with a decision and firmness which have been as much the object of the opprobrium of one party as of the hearty applause and approbation of another. Into any particular detail of his long political power we mean not to enter in this place, and the article already repeatedly referred to, renders such detail unnecessary. The period in which he exercised his high office is singularly important, and will be long remarkable in the history of the world; and in that general history Mr. Pitt will hold a distinguished place, whether it be written by a friend or foe. He was particularly blamed by the opposition and his enemies for a total change of principles, on his accession to power. He was violently blamed for deserting those principles which cast a special glory round his father's name, and by which he himself, while in opposition, had courted popularity, and by the credit of which he had attained that power which his enemies accused him of abusing. The future historian of this great man's life, however, if he be cool and candid, will attribute a just portion of the supposed inconsistency to the enthusiasm of youth and the habit of opposition on the one hand, and on the other, to that change of sentiment and system, which the actual possession of power must inevitably produce in every mind. For every man in similar circumstances will quickly find, that that which often appears most beautiful

beautiful and perfect in theory, is not always easy, nor often possible in practice. We mean not to call in question the advantages which are supposed to result from an opposition in a free country; but evils are inevitable in every human system, and some evils sufficiently notorious seem to attach to the system of party opposition in this country, and to be attributable to some of the greatest men, when in opposition; of whom our annals can boast. 1. Men in opposition are always suspicious of men in power, and the spirit of party is frequently apt to carry the most virtuous minds far beyond the bounds which the truth of the case requires. 2. The motives of every measure proposed by government cannot always be safely unfolded at the time, and the most violent opposition may consequently be excited against measures which the impartial historian will heartily approve, and which the very opposition would support; did they know all the circumstances of the case. 3. Opposition in a free country, especially in men of fair characters, is always likely to be popular; and the most virtuous men have frequently very seriously embarrassed government in the prosecution of measures which they would themselves, if in power, have found it indispensibly necessary to adopt. 4. An acute and eloquent member of opposition may easily find a flaw in every measure, and ground of suspicion in every exercise of his opponent's power; and, as he is probably ignorant of numerous necessary circumstances, his expression may be very powerful without being wise, and very popular without being salutary. 5. Opposition, with whatever evils it may frequently be accompanied, is certainly calculated to be useful. It furnishes a check to ministerial power, even when it appears least successful; and it compels sobriety of decision and maturity of discussion, even when it appears most capricious; but it does not indicate much knowledge of human nature, nor much accuracy and coolness of judgment, to conclude, that every thing which may be plausibly opposed is therefore radically wrong; or that he is culpably inconsistent, who, when his circumstances are completely changed, finds it necessary to change his system of conduct, and perhaps to adopt some portion of that system which he may have previously opposed. 6. Partial and theoretical views, which it may be utterly impossible to reduce to practice, must frequently decide the conduct of every opposition. They seize some particular view of the subject before them, and with perfect sincerity apply it to their purpose of making a popular impression against their ministerial rival, when, were they themselves in power, they would neither presume nor be able to act on the principles which they support, nor to enforce the measures which they recommend, on views of the case generally imperfect and partial. 7. In deciding on any measure, a minister has to consider what is right and what is practicable, with a full view of all the public and private relations, and of all the facilities and difficulties of the case; whereas a member of the opposition, in proposing any plan, will naturally direct more of his attention to that which is

plausible, than to that which, if in power, he might find practicable.

It does not, therefore, appear to us, we confess, necessarily to follow, that the measures of a minister are wrong, and his character vicious and inconsistent, because they differ materially from the language of his opposition; and we are perfectly certain, that the grounds on which we would venture to palliate the supposed political delinquencies of Mr Pitt, cannot safely be rejected by his greatest political enemies, without exposing themselves, and their great leader especially, to at least equal censure. We at least are willing, with perfect impartiality, to allow this mode of palliation, which we deem just and natural, to be equally applied to both. That Mr Pitt was wholly free from error we will never venture to contend. The period in which, as prime minister, he served the British monarch, was beyond all precedent difficult and dangerous, and he might without much censure, even in the first stages of his administration, hesitate about carrying into effect those fine theories of reform which, in his earliest enthusiasm, he so eloquently supported. The theory may be very fine; but in a highly luxurious and corrupted state of society, is it practicable? And if it did appear practicable to so young a man, in the first efforts of speculative opposition, those difficulties which he would then be the last to anticipate, he would now be the first to feel; and the rapid events of his momentous life quickly pressed them on his attention with a force not to be resisted. That he was ambitious of power is not denied by his friends, and this passion of noble minds will not be greatly blamed, even by his enemies; for even if he erred, he certainly intended, in the exercise of his power, to promote the honour and the interest of his country. He has never, that we know, been accused of any private vice; and, while he retrieved the finances of the country from approaching ruin, and by his management and measures enabled the country to make exertions beyond the utmost reach of previous calculation, he himself lived in comparative poverty, and died in debt. His manner was said to be distant and haughty; and his enemies have been numerous and virulent. His private friends were strongly attached to him; and his public friends, more numerous, we believe, than his enemies, survive his power, and are still zealous assertors of his well-earned fame. The most virulent accusations of his enemies will, we are well persuaded, not survive the present generation. The French revolution, in its furious progress, excited so many and such violent passions in every country, that no man possessing political power at the time, could escape censure, let his conduct with respect to that desolating fury be what it would. Mr Pitt was accused by a party in France (and the accusation was embraced with avidity by the short-sighted tools of faction at home) of secretly fomenting the ruinous excesses of the democratic party in that country long before the war. The writer of this article heard many years ago this accusation discussed in the presence of one of the ablest and best men, and one of the most zealous

assertors

assertors of genuine liberty which France, or perhaps any other country, ever produced. He said, without hesitation, "The accusation is false."

was myself once inclined to believe it; but I happened, by a singular accident, to discover the confidential opinions and instructions of Mr Pitt with regard to our unhappy convulsions; and they gave me a view of his political sagacity, and of his political integrity, which raised him in my estimation to the highest rank, both as a minister and a man." He has been accused of a barbarous love of war; and the time has probably not yet arrived when the truth or falsehood of the accusation can be temperately discussed. We are ourselves, however, most seriously persuaded, that the preservation of peace was his darling object. It is at least obvious, that if war with France had been his wish, he might have seized many a fair opportunity of commencing it before it was commenced; and, perhaps, posterity will be more inclined to blame his tardiness than his precipitation. Much has been rashly written and rashly believed on this subject. Happily for the interests of truth and of unprejudiced posterity, the leaders in the mighty system of French anarchy have left materials amply sufficient to exculpate Mr Pitt from all blame as to the origin of the war; and Dr Marsh has reduced these materials to such order, in his *History of the Politics of France and England*, as to enable every impartial man to form his own opinion.

Though, however, we are fully convinced that Mr Pitt will be found blameless in the origin of the war, we mean not to infer that he was always wise in the conduct of it; and there does appear an inconsistency, for which we cannot account, in his haughty refusal to treat with Bonaparte in January 1800, and his support of the peace of Amiens. Not that we believe (nor now can any man believe) that Bonaparte was seriously desirous of peace on equitable terms in 1800. We know, from the most certain grounds, and but one remove from the tyrant's own mouth, that peace was not his object; that it was necessary for him to make the proposal; but that he hoped, by some means or other, to attribute the blame of continuing the war, which, at all events, he was determined to continue, to the British government. The unconditional refusal of Mr Pitt to treat at all, at that time, gave a facility to his policy which he had not dared to hope. But even here, where, judging from subsequent events, it is so easy to find ground of censure, candour will at the same time suggest a plea of palliation. In January 1800 there appeared a strong ground of probability that the powers of Europe might be able to give an effectual check to the desolating ambition of France; and it was obvious that, if he sought for peace, it was only that he might attain his purpose with more certainty and decision. To agree to treat with Bonaparte in such circumstances might be justly considered, at that time, as renouncing the best interests, and sealing the fate of Europe. Mr Pitt characterised the bold and successful usurper as the CHILD AND CHAMPION OF JACOBINISM; as a man whose ambition and violence were beyond all bounds;

with whom it was in vain to treat, because no treaty could bind him. How virulently the minister was blamed for this supposed unjust attack on the great man, must be full in the recollection of all our readers: but subsequent events have too fatally proved his penetrating sagacity; and his enemies, if they choose not to acknowledge their own political blindness, must seek for some palliation of their conduct in the partial views of a systematic opposition. As a financier, no man ever obtained a higher character, nor we believe more justly than Mr Pitt; and had the French revolution not occurred, and as a torrent overthrown the balance of power in Europe, he would probably have raised his country to the summit of commercial and social prosperity. Nor is it slight praise (which even enmity cannot refuse him), that, amidst surrounding desolation, he contributed to preserve that country which he so ardently loved, and to preserve it great and powerful, and prosperous, amidst the severest pressure of unprecedented exertions. In the administration of a free country, general approbation will never be the boon of any individual. In any particular case, if he have only the choice of two measures, whether he choose the one or the other he will be subjected to blame, and that too, frequently by the same persons. The proof of this may be very generally remarked in our history; but, perhaps, no fact will elucidate it more fully than that of the regency bill in 1788. That Mr Pitt acted in that business upon principle and not from interested views, we think is evident, in that he could expect nothing from the regent, had the sovereign continued indisposed. The case was new and difficult; and his view of it appears just and constitutional, while that of his opponents seemed rash, and might, in other circumstances, have been fraught with danger. Had he at least adopted it of himself, he would have been liable to much censure; and we are persuaded that his opponents would have been the first to apply that censure. The conduct of the parliament of Ireland on that interesting occasion, suggested to the mind of this great statesman the important measure of a legislative union between the two countries; which, after numerous difficulties, he at length accomplished. See ENGLAND, § 131, 132, and IRELAND.

After holding his high office for the long period of eighteen years, Mr Pitt and all the members of his cabinet suddenly retired in 1801. That the union with Ireland will eventually be of inestimable advantage to the two countries, unless it is broken by intemperance or faction, cannot we think be doubted. The cause of Mr Pitt's retreat from office was said to be a promise connected with this union which he could not fulfil. The real cause, we are persuaded, was the necessity, real or supposed, of making peace. Mr Addington became prime minister, and preliminaries were signed at London, on the 1st October 1801. The definitive treaty was signed at Amiens in March 1802, see ENGLAND, § 132; and was defended by Mr Pitt, in the house of commons, with all the force of his abilities and influence. Comparing his conduct now with that in January 1800, we have

have already confessed that we think it inconsistent; but, perhaps, it was necessary to *prove* to general conviction, how vain was the hope of permanent tranquillity with such a power as that of France; and this advantage, the hollow truce which endured little more than a year, we believe, effectually produced.

In 1804 Mr Pitt opposed the administration which he had hitherto generally supported; and, after various contests, Mr Addington at length retired, and he resumed his former situation, not without being violently accused of deceiving Mr Fox, by whose influence he succeeded in lessening the minister's majority. He did not long survive his reinstatement in office. His constitution was never very strong; he was subject to a hereditary gout, which he probably increased by his mode of life. He succeeded in 1805 in forming a new coalition against France, between Great Britain, Russia, and Austria, the effects of which were singularly fatal; the humiliation of Austria being completely sealed by the disastrous battle of Austerlitz in the close of that year. His end was rapidly approaching from the natural progress of disease; but it was probably hastened by the news of that fatal battle, and by the desolating prospect which the civilized world exhibited to his ardent mind, debilitated, as it doubtless was, by disease. He died in a most Christian manner, on the 23d of January 1806, in the 47th year of his age. Among the last words which he was heard to utter, interesting and characteristic words, were, "Oh, my country!" His character we will not attempt to draw, for we are not equal to the task. That he was, if not the greatest, one of the greatest men which his country ever produced, will not be questioned even by his enemies; and that even Cincinnatus was not more disinterested has been universally allowed. He had originally no private fortune, and only the very inadequate salary of his two offices to support his rank. The wardenship of the Cinque Ports was forced on him by his friends. In 1798 several opulent merchants proposed to present to him £100,000 Sterling, but they could not induce him to accept of it. He was interred at the public expense, and a monument was ordered in Westminster Abbey to his memory. On the 3d of February 1806, £40,000 Sterling were voted to defray his debts, which both friends and enemies allowed were contracted neither by profusion nor excess. His great political opponent, we recollect, opposed this reasonable motion. The public funeral took place on the 22d of February; and when it passed the immense mass of people assembled, they, by a general and instantaneous movement of respect, stood silent and uncovered. The principal herald thus proclaimed the style of the deceased:—"Thus it hath pleased Almighty God to take out of this transitory life, unto his Divine mercy, the late Right Hon. William Pitt, one of his majesty's most honourable privy council, first lord commissioner of the treasury, admiral and lord warden of the Cinque Ports, and governor of Dover Castle; one of the representatives in parliament for the university of Cambridge, and high steward for that university; one of the lords of trade and plantation, a commissioner for the

affairs of India; and the character to whose memory is inscribed—*Non sibi sed patrie vixit!*"

(4.) PITT, in geography, a county of North Carolina in Newbern district; bounded on the N. by Edgcomb, NE. by Begufort, S. by Crave and SW. by Glasgow. It contained 5908 citizens and 2367 slaves in 1795. Greenville is its capital.

(5.) PITT, FORT, a fort of the United States on the banks of the Ohio, now formed into a town, called PITTSBURG.

(6.) PITT ISLAND, an island in the North Pacific Ocean, near the west coast of North America; between Norfolk Sound and Salisbury Sound; 30 miles long, and 3 broad.

PITTACUS, a native of Mitylene in Lesbos, was one of the seven wise men of Greece; his father's name was Hyrradius. With the assistance of the sons of Alcæus he delivered his country from the oppression of the tyrant Melanchrus; and in the war which the Athenians waged against Lesbos, he appeared at the head of his countrymen, and challenged to single combat Phrynæus the enemy's general. As the event of the war seemed to depend upon this combat, Pittacus had recourse to artifice; and when he engaged, he entangled his adversary in a net which he had concealed under his shield, and easily dispatched him. He was amply rewarded for this victory, and his countrymen, sensible of his merit, unanimously appointed him governor of their city with unlimited authority. In this capacity Pittacus behaved with great moderation and prudence; and, after he had governed his fellow-citizens with the strictest justice, and established the most salutary laws, he voluntarily resigned the sovereign power, having enjoyed it for ten years. His disinterestedness gained him many admirers; and when the Mityleneans wished to reward his public services by presenting him with an immense tract of territory, he refused to accept more land than what should be contained in the distance to which he could throw a javelin. He died in his 70th year, about A. A. C. 579, after he had spent the last ten years of his life in literary ease and retirement. Many of his maxims were inscribed on the walls of Apollo's temple at Delphi, to show to the world how great an opinion the Mityleneans entertained of his abilities as a philosopher, a moralist, and a man.

PITTALY, a village of Scotland, in Aberdeenshire, in the parish of Pittligg, two miles east of Rosehearty. In 1791 it contained 116 inhabitants, who are chiefly employed in fishing.

PITTANCE, *n. f.* [*pittance*, Fr. *pittance*, Italian.] 1. An allowance of meat in a monastery. 2. A small portion.—

You're like to have a thin and slender *pittance*.

—The ass saved a miserable *pittance* for himself. *L'Estrange*.—I have a small *pittance*, left, with which I might retire. *Arbutnot*.—Many of them lose the greatest part of the small *pittance* of learning they received at the university. *Swift*.—

Half his earned *pittance* to poor neighbours went.

PITTEN, a town of Germany in Austria, eight miles south of Ebenfurth.

(1.) PITTENWEEM.

(1.) **PITTENWEEM**, a parish of Scotland, on the coast of Fife, a mile and a quarter long and half a mile broad. The climate is dry and healthy, the surface level, the soil black and loamy, but very fertile, the water is remarkable soft and free from brackishness. The population, in 1791, was 1157; increase 118 since 1755; chiefly owing to the collieries, and salt-works. The people are chiefly employed in the salt work, collieries and fishing; but fish are not so numerous on this coast as formerly. Great quantities of hollers are caught, and sent to London and Edinburgh. The whole parish lies upon coal. There are 9 salt pans. The average expence of coal and salt-works, is about L.50 a year.

(2.) **PITTENWEEM**, a sea port town and royal burgh of Scotland, on the S. coast of Fife, and N. bank of the Frith of Forth, 23 miles NE. of Edinburgh. It was erected into a royal burgh by K. James V. in 1547; and joins with Anstruther Easter and Wester, Crail, and Kilrenny, in choosing delegates, to elect a representative in the imperial British parliament. All the inhabitants of the parish reside in it, except 4 families. The number of vessels belonging to it is only 4, and of boats 5. From the records of the town it appears, that prior to 1639, its shipping was considerable. On the 14th Feb. 1651, it was visited by King Charles II, and several of his courtiers, who were elegantly entertained by the bailies and council. An extract of the records of council, respecting the entertainment given his majesty on that occasion, is inserted in Sir J. Sinclair's *Stat. Acc.* Vol. iv. p. 376, 377. In 1779, Pittenweem was visited by Paul Jones. The peepie, taking his vessel for a British ship, sent out a boat, and asked for some gun-powder, which he gave them; but detained their pilot for a considerable time after. Lon. 2. 49. W. Lat. 56. 12. N.

PITTERSBERG, a town of Germany, in Caithnia; 3 miles N. of Mauten.

PITTHEA, a town of Argolis, near Troezen.

PITTHEUS, the son of Pelops and Hippodamia, king of Troezen. He is said to have been very learned for that age. He educated not only his grandson, Theseus, the son of Ægeus king of Athens by his daughter Æthra, but even taught many of his subjects; and wrote a book, which was extant and seen by Pausanias the geographer. He was buried at Troezen, where his tomb, and date of judgment were seen many ages after. *Paus.* 1. 2. *Plut.* Strabo, 8.

PITTHIEVELESS, a village about a mile W. of Perth.

PITTOSPORUM, in botany; a genus of the monogynia order, belonging to the pentandria class of plants. The calyx is pentaphyllous, inærous and deciduous. The petals are 5; the style broad-shaped; the capsule somewhat angular, trilocular, and containing 3 or 4 angulated seeds, adhering to the capsule by means of a liquid resin in the loculaments. Of this there are 3 species, viz.

1. **PITTOSPORUM CORIACEUM**, grows in Malakia, and flowers in May and June.

2. **PITTOSPORUM TENUIFOLIUM**, and } are

3. **PITTOSPORUM UMBELLATUM**, } both natives of the Cape of Good Hope.

VOL. XVII.—PART II.

PITTSBOROUGH or } a town of N. Carolina,
(1.) **PITTSBURG**, } the capital of Chatham county, seated on an eminence near Hickory mountain in a fertile country and healthy climate, whence it has been called the *Montpelier* of N. Carolina. It has a court-house, where quarterly courts are held. It is 26 miles SW. of Hillsborough, 54 SW. of Fayetteville, and 505 from Philadelphia.

(2.) **PITTSBURG**, a post town of Pennsylvania, the capital of Allegheny county, is seated on a fine plain between the Allegheny and Monongahela, about a quarter of a mile from their confluence, where they form the Ohio, 1188 miles above its conflux with the Mississippi. It is regularly laid out on Penn's plan, about 200 yards from the ground where formerly **FORT DU QUENNE** stood, when the country was possessed by the French, and which was afterwards called **FORT PITT**. In 1756, Gen. Braddock, and a party of British troops, going to take it, fell into an ambuscade, and he was killed and his troops taken; but in 1758, it was taken by the British. It consists of several streets crossing each other at right angles. In Dec. 1796 it contained above 200 houses, and 1353 citizens; but the number has since greatly increased. The adjacent hills abound with coals, and before the revolution one of these coal hills took fire and continued burning for 2 years, till part of the hill falling in extinguished the fire. During the floods in spring, vessels of 200 tons burden may go from Pittsburg to the sea in 10 days, though 2000 miles distant. It has an academy, a Presbyterian and a German Lutheran church, with a court-house, and quarterly courts, &c. It is 303 miles W. by N. of Philadelphia. Lon. 80. 8. W. Lat. 40. 11. N.

(1.) **PITTSFIELD**, a port town of Massachusetts, on the W. line of Berkshire county, six miles N. of Lenox, and 140 W. of Boston; containing 1991 citizens in 1795. It is 295 miles from Philadelphia, and 27 W. of Northampton.

(2.) **PITTSFIELD**, a township of New Hampshire, in Rockingham county; containing 888 citizens, in 1795.

(1.) **PITTSTON**, or } a post town of New

(1.) **PITTSTOWN**, } Jersey, in Hunterdown county on the W. head water of the Rariton. 58 miles NNE. of Philadelphia. Lon. 6. 13. E. of that city. Lat. 40. 36. N.

(2.) **PITTSTOWN**, a post town of Maine, in Lincoln county; on the Kennebeck, 187 miles N. by W. of Boston, and 540 from Philadelphia. In 1790, it contained 605 citizens.

(3.) **PITTSTOWN**, a post town of New York, in Rensselaer. In 1795, it had 419 electors, 2414 citizens, and 33 slaves.

(1.) **PITTSYLVANIA**, a county of Virginia, between the Blue Ridge and Tide Waters, bounded on the N. by Campbell county, E. by Halifax, S. by N. Carolina, W. by Patrick, and NW. by Franklin counties. It is 40 miles long, and 37 broad; and, in 1795, contained 8300 citizens, and 2979 slaves.

(2.) **PITTSYLVANIA**, the capital of the above county, is 110 miles SW. of Richmond. It has a county court-house; the court meets the last Tuesday of every month.

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PITTY,

PITTY, a river of Indostan, a branch of the Indus, which runs into the sea.

(1.) **PITUITARY**, *adj.* Of or belonging to phlegm.

(2.) **PITUITARY GLAND**. See **ANATOMY**, *Index*.

* **PITUITE**. *n. f.* [*pituïte*, Fr. *pituïta*, Lat.] Phlegm.—Serous defluxions and redundant *pituïte* were the product of the winter. *Arb*

* **PITUITOUS**. *adj.* [*pituïtosus*, Lat. *pituïteux*, Fr.] Consisting of phlegm.—It is thus with women only, that abound with *pituïtous* and watery humours. *Brown*.—The forerunners of an apoplexy are weakness, wateriness and turgidity of the eyes, *pituïtous* vomiting, and laborious breathing. *Arbuthnot*.—The lungs are formed likewise to separate and discharge the redundant *pituïtous* or flegmatick parts of the blood. *Blackmore*.

PITULANI, an ancient people of Italy, in Umbria. *Lempriere*.

PITULUM, a town of Umbria, capital of the Pitulani. *Lemprie*.

* **PITY**. *n. f.* [*pitie*, Fr. *picta*, Italian.] 1. Compassion; sympathy with misery; tenderness for pain or uneasiness.—

Wan and meagre let it look,

With a *pity* moving shape.

Waller.

—An ant dropt into the water; a woodpigeon took *pity* of her, and threw her a little bough. *L'Estrange*.—He hath implanted in men a quick and tender sense of *pity*. *Colman*.—When *Aeneas* is forced in his own defence to kill *Lausus*, he has *pity* on his beauty. *Dryden*.—

The mournful train

Befought his *pity* to their helpless kind.

Dryden.

2. A ground of *pity*; a subject of *pity* or of grief.—That he is old, the more is the *pity*. *Shak*.—Julius Cæsar writ a collection of apophthegms; it is *pity* his book is lost. *Bacon*.—'Tis great *pity* we do not yet see the history of Chafmir. *Temple*.—

See, where she comes, with that high air and mien,

Which marks in bonds the greatness of a queen:

What *pity* 'tis!

Dryden.

What *pity* 'tis you are not all divine.

Dryden.

Who would not be that youth? what *pity* is it That we can die but once to serve our country?

Addison.

3. It has in this sense a plural. In low language.—Singleness of heart being a virtue so necessary, 'tis a thousand *pities* it should be discountenanced. *L'Estrange*.

(1.) * **TO PITY**. *v. a.* [*pitoyer*, Fr.] To compassionate misery; to regard with tenderness on account of unhappiness.—When I desired their leave, that I might *pity* him, they took from me the use of mine own house. *Shak*.—He made them to be *pitted* of all. *Psaln* cvi. 46.—

You I could *pity* thus forlorn.

Milton.

Compassionate my pains! she *pities* me!

Addison.

—*Pity* weakness and ignorance. *Law*.—The man is to be *pitied*, who has to do with a staunch metaphysician. *Beattie*.

(2.) * **TO PITY**. *v. n.* To be compassionate—I will not *pity* nor spare. *Jer*. xiii. 14.

PITYÆ, an ancient town of Asia Minor. *Apollonius*.

PITYASSUS, an ancient town of Pisidia. *Strabo*.
PITYOCAMPASIS, in entomology, the caterpillar of the pine-tree, received its compound name from that substance. It was considered a poison, and as a remedy, according to its different employment; but our chief information is derived from M. Reaumur, who has attentively observed its manner of life. The animal cannot bear much cold, and is therefore never found in the higher latitudes. It is styled processionary, because it never leaves its hold, where many families reside, till the evening, when it teems in trains, led on by two or three, and this train leaves a ribband of silk in its way; for those behind follow exactly the steps of those which preceded, and each leaves its fibre of silk. Their nests are found in autumn; they are born the middle of September, become torpid in December, and recover their strength again in spring. They then descend from the trees, plunge into the earth, and undergo their last change. It is the bombyx *pityocampa* of Fabricius, (*Maniffa Insector*. tom. ii. p. 115. n° 66.), and greatly resembles the processionary caterpillar of the oak. The ancients used it as a vesicatory, and the acrimony seems to reside chiefly in a dust which is collected in receptacles on its back. This is its offensive weapon, for it is thrown out at will, and produces very troublesome effects, though the hair of the animal and every part of its body seem to have a similar, but weaker power. The effect is also weaker in winter. Their silk is not sufficiently strong for the loom, and in hot water melts almost to a paste. In the earth it forms nests of stronger silk, but it is then found with difficulty: in boxes its silk is extremely tender. Adding to all these inconveniences, handling the cones produces all the bad effects of the dust. Matthioli recommends them as a styptic, and perhaps they may serve for burning on the skin instead of moxa, the downy silk of a species of artemisia. The ancients, afraid of its hurtful qualities, used them with caution, and enabled laws against their being sold promiscuously: the modern planter is chiefly afraid of them because they destroy the beauty of his trees, and he endeavours to collect the eggs by cutting off the branches which are burnt immediately.

PITYONESUS, an island on the coast of Peloponnesus, near Epidaurus. *Pliny*.

PITYUS, (*untis*) an ancient town of Colchis, now called **PITCHINDA**. *Pliny*, vi. c. 5.

(1.) **PITYUSA**, a name of **CHIOS**.

(2.) **PITYUSA**, an island on the coast of Argolis. *Plin*. iv. c. 12.

(3, 4.) **PITYUSÆ**, two islands on the coast of Spain; distinguished by the names of **ESUVI** and **OPHYSA**. (*Mela*. *Strab*. *Plin*.) See these articles.

PITZENBERG, a town of Germany, in Austria, 2 miles NW. of Schwannstatt.

PIVAT, or } a foot or shoe of iron or other
(1.) **PIVOT**, } metal, usually conical or terminat

inating in a point, whereby a body, intended to turn round, bears on another fixed at rest, and performs its revolutions. The pivot usually bears its turns round in a sole, or piece of iron or brass allowed to receive it.

(2.) * PIVOT. *n. f.* [*pivot*, Fr.] A pin on which any thing turns.—When a man dances on the rope, the body is a weight balanced on its rest, as upon two pivots. *Dryden*.

(1.) PIURA, a district or jurisdiction of Peru, in Truxillo. It was the first Spanish settlement in that country. The climate is hot, and very dry, rain being seldom known in it; but the want of it is supplied by a river, the water of which is conveyed over the country by canals.

(2.) PIURA, the capital of the above jurisdiction, founded in 1531 by Francis Pirano, containing about 1500 inhabitants. It has a fine hospital, under the care of the Bethlehemites, remarkable for its cures. It lies 25 miles SSE. of Paiza.

PIUS. [*Lat. i. e. pious.*] a name deservedly given to the emperor ANTONINUS; as well as to a son of METELLUS, because he exerted himself warmly to get his father recalled from banishment. It is also a name assumed by 7 popes of Rome, the last of whom is now (1804) living.

PIUS I. Pope and Saint, succeeded Hyginus, A. D. 142. He was an Italian; he condemned the heresies of Valentinus; and suffered martyrdom in 157.

PIUS II. Aeneas Sylvius PICCOLOMINI, was born on the 18th Oct. 1405, at Corsigni, in Sienaese, the name of which he afterwards changed into that of *Pienza*. Aeneas was carefully educated, and having finished his studies at Sienna, he went in 1431 to the council of Bale with Cardinal Capranica, as his secretary. He afterwards resided in the same capacity to Card. Albergati, and to Frederic III. who decreed to him the poetic crown, and sent him ambassador to Rome, Milan, Naples, Bohemia, and other places. Nicolas V. advanced him to the bishopric of Trieste, and after to that of Sienna. In 1456, after having distinguished himself in various nunciatures, he was made a cardinal by Calixtus III. whom he succeeded as pope on the 27th August 1458. Pius II. from the commencement of his pontificate, appeared jealous of the papal prerogatives. In 1460, he declared a bull, "declaring appeals from the pope to a council to be null, erroneous, defensible, and contrary to the sacred canons." That bull, however, did not prevent the procurator general of the parliament of Paris from appealing to a council in defence of the Pragmatic sanction, which the pope had strenuously opposed. Pius was then at Mantua, whether he had one to engage the catholic princes to unite in a war against the Turks. The greater part of them agreed to furnish either troops or money; others refused both, particularly the French, who from that moment incurred his holiness's aversion. That aversion abated under Lewis XI. whom he refused in 1461 to abolish the Pragmatic sanction, which the parliament of Paris had supported with so much vigour. The year 1463 was rendered famous by a controversy which took place between the Cordeliers and Dominicans,

about two very absurd questions. The dispute became so violent, that they called each other *heretics*; which obliged the pope to issue a bull, forbidding such odious epithets. He next published another bull, dated 26th April, retracting what he had written to the council of Bale when he was its secretary; wherein he had written some sentiments that "tended to hurt the authority of the apostolic see." In this bull he gave a short account of his life and actions, with the history of the council of Bale, to which he went with Card. Capranica in 1431. In the mean time, the Turks were threatening Christendom. Pius, ever zealous against the infidels, resolved to fit out a fleet, and pass over into Asia himself. He went to Ancona, but fell sick with the fatigue of the journey, and died on the 16th August 1464, aged 59. Pius was one of the most learned men of his time, and one of the most zealous pontiffs. His chief works are, 1. *Memoires of the council of Bale*. 2. *The history of the Bohemians, from their origin to 1458*. 3. *Two books on cosmography*. 4. *The history of Frederic III. published in 1785, folio, and esteemed pretty accurate*. 5. *A treatise on the education of children*. 6. *A poem upon the passion of Jesus Christ*. 7. *A collection of 432 letters, printed at Milan 1473, in folio, in which are some curious anecdotes*. 8. *The memoirs of his own life, published by John Gobelin Perfonne, his secretary, at Rome, 4to, 1584*. 9. *Historia rerum ubicunque gestarum, of which only the first part was published at Venice in 1477 in folio*. His works were printed at Helmstadt in 1700 in folio, with his life prefixed. The verse of Virgil's *Aeneid*, (lib. i. v. 382.) which begins

Sum PIUS AENEAS,

was in the punning humour of the age applied to him.

PIUS III. whose name was Francis Todeschini, was nephew of Pius II. who caused him take his name of PICCOLOMINI, and made him an archbishop and cardinal. In 1503, he succeeded Alexander VI. but died in 21 days after his election.

PIUS IV. John Angelo De MEDICIS (not of the Florence family) was born at Milan in 1497. He was son to Bernardin Medecini, and brother of the famous Marquis de Marignan, Charles Vth's general. He filled several important offices under Popes Clement VII. and Paul III. Julius III. who had entrusted him with several legations, made him a cardinal in 1549; and he was elected pope on the death of Paul IV. Dec. 25th 1559. His predecessor had rendered himself detestable to the Romans. Pius IV. commenced his reign by punishing the nephews of Paul IV. causing Card. Caraffe to be strangled, and his brother, Fr. Patriziano, beheaded. His zeal was afterwards directed against the Turks and heretics. To stop the progress of these last, he renewed the Council of Trent. In 1561, he sent to all the catholic and protestant princes the bull for calling that assembly. An end was, however, put to it by the industry of his nephew, S. Charles Borromeus, in 1563; and, on 26th Jan. 1564, he confirmed its decrees. In 1565 a conspiracy was formed against

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his

his life by Benedict Acolii, and other visionaries; but was discovered, and Benedict put to death. Pius died Dec. 9th 1565, aged 66, with the hatred of the Romans, whom his severities had exasperated. He adorned Rome with several public edifices.

PIUS V. S. Michael Ghisleri, born at Bosco, on the 17th Jan. 1504, was son of a senator of Milan. He turned a Dominican friar. Paul IV. informed of his merit, made him bishop of Sutri, cardinal in 1557, and inquisitor-general in Lombardy; but the severity with which he exercised his office obliged him to quit that country. He was sent to Venice, where his zeal met with still greater obstacles. Pius IV. made him bishop of Mondovi; and on his death he was elected pope, in 1566. His first object was to repress the luxury of the clergy, the pride of the cardinals, and the licentious manners of the Romans. He caused the decrees of Reformation enacted by the Council of Trent to be put in execution; he prohibited bull-biting in the Circus; he expelled prostitutes from Rome; and allowed cardinals to be prosecuted for debt. Gentle measures failing to reclaim heretics, he had recourse to severity, and several perished in the flames of the inquisition. He particularly displayed his zeal for the grandeur of the Holy See in 1568, by ordaining that the bull *In cana domini*, which Clement XIV. had suppressed, should be published throughout the whole church. That bull establishes the unlimited power of the popes over all princes. It was rejected by most of the foreign states. Pius V. had the courage to make war on the Turks, by forming a league with the Venetians and Philip II. of Spain. This was the first time that the standard of the *two keys* was seen displayed against the *crescent*. The naval armies engaged on the 7th Oct. 1571, in Lepanto Bay, and the Christian princes obtained a signal victory over the Turks, who lost above 30,000 men, and near 200 galleys. The success was chiefly owing to the pope, who exhausted his treasury in fitting out that armament. He died of the gravel six months after, 30th April 1572, aged 68. His name will for ever adorn the list of Roman pontiffs. His bulls against Elisabeth, indeed, and in favour of the inquisition, with his rigorous prosecution of heretics, prove that he had more zeal than humanity; but in other respects, he was not without his virtues. Selim II. caused public rejoicings to be made at Constantinople for his death for three days. The pontificate of Pius is also celebrated for the condemnation of Balaam, the extinction of the order of Humiliars, and the reformation of that of the Cistercians. He was canonized by Clement XI. in 1712. There are extant several of his letters, printed at Anvers, in 1640, in 4to. Felibian, in 1672, published his *Life*, translated from the Italian of Agatio di Somma.

PIUS VI. whose original name was *Angelo Braschi*, was of a noble, but reduced family. He was born in 1718, and rose to the rank of prelate and cardinal entirely by his merit. He was elected pope on the death of Clement XIV. During the first years of his pontificate, which were perfectly

tranquil, he executed a work, which some emperors had attempted in vain, by draining the Pontine marshes, which extended about 40 miles round Vellari, Terracina, and Piperno. He not only employed the best engineers, but regularly inspected the work himself till it was finished; and he caused immense canals to be dug to carry off the water, and thus recovered a great deal of fertile land from the marshes. Along the banks of these canals, which were ornamented with 2 rows of poplars, he made a road near 40 miles long, in a straight line, terminating with an elegant palace. At last his tranquillity was interrupted on the accession of the emperor Joseph II. whose plans of reformation prognosticated no good to the church. To prevent their execution, Pius made a visit personally to the emperor, in Jan. 1781. who received him with all possible respect, but adhered inflexibly to his purpose. The revolution of France, and the consequent overthrow of all form of religion, gave him a still greater shock. Pius, however, did his utmost to preserve peace with the republic, but the murder of citizen Bassville, the French ambassador, in 1793, (see *BASSVILLE*) furnished the Directory with a pretext, such as they were waiting for, to overthrow the papal power, turn Rome into a democracy, and carry the pope a prisoner to France; where, after being shifted about to various places, he died at Valence in August 1799, and received a burial far inferior to his dignity.

(1.) * PIX. *n. f.* [*pixis*, Lat.] A little chest or box, in which the consecrated host is kept in Roman catholic countries. *Hanmer.*—

He hath stolen a *pix*.

Shak.

(2.) PIX. See MINT.

(3.) PIX, MARY, an ingenious English dramatic writer, who flourished about the middle of the 17th century. She wrote several tragedies and comedies; and died about 1699.

PIXANGA. See PIRA, N° 8.

PIXENDORFF, a town of Germany, in Austria; 3 miles SSW. of Tulln.

PIXIDATIUM FOLIUM. See BOTANY, *Pl. f.*

PI-YANG, a town of China, of the 3d rank, in Honan; 32 miles WSW. of Yung-hing.

PIZARRO, Francis, a celebrated Spanish general, the discoverer and conqueror of Peru, in conjunction with Diego Almagro, a Spanish navigator. They are both charged with horrid cruelties to the inhabitants; and they fell victims to their own ambition, jealousy, and avarice. Almagro revolting, was defeated and beheaded by Pizarro, who was assassinated by Almagro's friends in 1541. See PERU, § 4, 5.

PIZZIGHITONE, a town of the Italian republic, in the department of the Upper Po, district and late territory of Cremona, with a strong castle, seated on the Adda, in which Francis I. K. of France, was kept prisoner. Dr Brookes and J. Walker say it is seated on the Serio; but both Mr Crutwell and Dr Oppenheim place it on the Adda. It was taken by the French in 1733, but restored. It was taken by the French republicans under Bonaparte, on the 12th May 1796, with 400 Austrian prisoners, after a brief cannonade.

cannonade. It contains above 400 citizens, and is 9 miles NW. of Cremona, 13 SE. of Lodi, and 36 SE. of Milan. Lon. 10. 4. E. Lat. 45. 16. N.

* **PIZZLE**. *n. f.* [quasi *pisile*. *Minshew*.—The *pizzle* in animals is official in urine and generation. *Brown*.

(1.) **PIZZO**, a town of Naples, in the Gulf of St Eufemia 4 miles from Monte Leons.

(2.) **Pizzo di Gorto**, a town of Sicily, in the valley of Demona; 6 miles S. of Melazzo.

(3.) **Pizo Ferrato**, a town of Naples, in Abruzzo Citra; 13 miles ESE. of Solmona.

PLA, a town of Spain, in Catalonia; 5 miles S. of Urgel.

PLAAS, David **VANDER**, a celebrated Dutch painter, born at Amsterdam in 1647. He excelled in portraits, and died in 1704.

PLABENNEC, a town of France, in the dep. of Finisterre; 5 miles SW. of Lefneven, and 7½ NE. of Brest.

* **PLACABILITY**. *n. f.* [from *placabile*].

* **PLACABLENESS**. *n. f.* [Willingness to be appeased;] possibility to be appeased.—The general consent of all nations in their opinion of the mercy and *placability* of the divine nature. *Anon.*

* **PLACABLE**. *adj.* [*placabilis*, Lat.] Willing or possible to be appeased.—

Metbought I saw him *placable* and mild.

Milton.

—Those implanted anticipations are, that there is a God, that he is *placable*. *Hale*.

* **PLACARD**. *n. f.* [*plakaert*, Dutch; *placard*, Fr.]

* **PLACARTE**. *n. f.* [*card*, Fr.] An edict; a declaration; a manifesto.

* **To PLACATE**. *v. a.* [*placare*, Lat.] To appease; to reconcile.—This word is used in Scotland.—A right to approach and rely on the protection and beneficence of a *placated* deity, is not deducible from nature. *Forbes*.

PLACCIUS, Vincent, a learned philosopher and lexicographer, born at Hamburg, in 1642. He studied at Leipzig, and published a *Dictionary of Anonymous and Pseudonymous Authors*.

(1.) * **PLACE**. *n. f.* [*place*, Fr. *piazza*, Italian; from *platea*. Lat.]

1. Particular portion of space. —Search you out a *place* to pitch your tents. *Deut. i. 33*.—We accept it always and in all *places*. *Acts, xxiv. 3*.—

Here I could frequent

With worship, *place* by *place*, where he vouchsaf'd

Presence divine.

Milton.

—I will teach him the names of the most celebrated persons who frequent that *place*. *Addison*.

2. Locality; ubiety; local relation.—*Place* is the relation of distance betwixt any thing, and any two or more points considered as keeping the same distance one with another; and so as at rest: it has sometimes a more confused sense, and stands for that space which any body takes up. *Locke*. 3. Local existence.—There was found no *place* for them. *Rev. xx. 11*. 4. Space in general.—

But she all *place* within herself confines.

Darvies.

3. Separate room.—

In his brain

He hath strange places cram'd with observation.

Shak.

—His catalogue had an especial *place* for sequestered divines. *Pell. 6*. A seat; residence; mansion.—The Romans shall take away both our *place* and nation. *John*.—Saul let him up a *place*. *1 Sam. 7*. Passage in writing.—Hofea faith of the Jews, they have reigned, but not by me; which *place* proveth, that there are governments which God doth not avow. *Bacon*.—I could not pass by this *place*, without giving this short explication. *Burnet*. 8. Ordinal relation.—What scripture doth plainly deliver, to that the first *place* both of credit and obedience is due. *Hooker*.—Let the eye be satisfied in the first *place*. *Dryden*.—Consider, in the first *place*, that he is omnipresent; and, in the second, that he is omniscient. *Addison*. 9. State of actual operation; effect.—

These fixed evils sit so fit in him,

That they take *place*, when virtue's steely bones
Look bleak in the cold wind. *Shak.*

—These fair overtures could take no *place*. *Hayward*.—They are defects in the brain; for they take *place* in the stoutest natures. *Bacon*.—

With faults confess'd commission'd her to go,
If pity yet had *place*, and reconcile her foe

Dryden.

Where arms take *place*, all other pleas are vain.

Dryden.

—The unhappy omen took not *place*. *Dryden*. Virgil must be still excepted, when that perhaps takes *place*. *Dryden*.—It is stupidly foolish to venture our salvation upon an experiment, which we have all the reason imaginable to think God will not suffer to take *place*. *Atterbury*. 10. Existence.—Mist government is by no means of Gothic invention, but hath *place* in nature and reason. *Swift*. 11. Rank; order of priority.—

The heavens themselves, the planets, and this centre,

Observe degree, priority, and *place*. *Shak.*

12. Precedence; priority. This sense is commonly used in the phrase *take place*.—

Do you think I'd walk in any plot,

Where Madam Sempronia should take *place* of me?

Ben Jonson.

—There would be left no measures of credible and incredible, if doubtful propositions take *place* before self-evident. *Locke*.—As a British freeholder, I should not scruple taking *place* of a French marquis. *Addison*. 13. Office; public character or employment.—

Do you your office, or give up your *place*.

Shak.

'Tis but the fate of *place*, and the rough brake

That virtue must go through. *Shak.*

—The horsemen came to Lodrisius, beseeching him to take upon him the *place*. *Knolles*.

Nor doth he promise, which is more,

That we shall have their *places*. *Denham*.

Patriots for a *place*, abandon'd fame. *Guthrie*.

—Some magistrates are contented, that their *places* should adorn them; and some study to adorn their *places*. *Atterbury*. 14. Room; way; space for appearing or acting given by cession; not opposition.

position.—Rather give *place* unto wrath. *Rom. xii.*

19.—

Give *place*, and mark the difference if you can,

Between a woman warrior and a man.

Dryden.

Victorious York did first, with fam'd success,
To his known valour make the Dutch give *place*.

Dryden.

The rustick honours of the scythe and share,
Give *place* to swords and plumes.

Dryden.

15. Ground; room.—My word hath no *place* in you. *John, viii. 37.*—There is no *place* of doubting. *Hammond.* 16. Station in life.—God would give them, in their several *places* and callings, all spiritual and temporal blessings. *Duty of Man.*

(2.) *PLACE*, *LOCUS*, in philosophy, a mode of space, or that part of immovable space which any body possesses. See *METAPHYSICS*, § 39; and *NEWTONIAN PHILOSOPHY*, *Scd.* III. *Scd.* III.

(3.) *PLACE*, in astronomy. The place of the sun, a star, &c. denotes the sign and degree of the zodiac which the luminary is in; or the degree of the ecliptic, reckoning from the beginning of aries, which the planet or star's circle of longitude cuts; and therefore coincides with the longitude of the sun, planet, or star. As the sine of the sun's greatest declination $23^{\circ} 30'$: to the sine of any present declination given or observed; for instance, $23^{\circ} 15'$: so is the radius 10: to the sine of his longitude $81^{\circ} 52'$; which, if the declination were north, would give $20^{\circ} 52'$ of gemini; if south, $20^{\circ} 52'$ of capricorn, for the sun's place. See *DECLINATION*, &c. The place of the moon being that part of her orbit wherein she is found at any time, is of various kinds, by reason of the great inequalities of the lunar motions, which render a number of equations and reductions necessary before the just point be found. The moon's fictitious place is her place once equated; her place nearly true, is her place twice equated; and here true place thrice equated. See *ASTRONOMY*, *passim*.

(4.) *PLACE*, in war, a general name of all kinds of fortresses where a party may defend themselves. Thus, 1. A *strong* or *fortified place* is one flanked, and covered with bastions. 2. A *regular place*, one whose angles, sides, bastions, and other parts, are equal; and this is usually denominated from the number of its angles, as a pentagon, hexagon, &c. 3. An *irregular place* is one whose sides and angles are unequal. 4. A *Place of arms* is a strong city or town pitched upon for the chief magazine of an army; or, in a city or garrison, it is a large open spot of ground, usually near the centre of the place where the grand guard is commonly kept, and the garrison holds its rendezvous at reviews, and in cases of alarm, to receive orders from the governor. 5. *Place of arms of an attack*, in a siege, is a spacious place covered from the enemy, by a parapet or epaulement, where the soldiers are posted ready to sustain those at work in the trenches against the soldiers of the garrison. 6. *Place of arms, particular*, in a garrison, a place near every bastion, where the soldiers sent from the grand place to the quarters af-

signed them, relieve those that are either upon guard or in fight. 7. *Place of arms without*, is a place allowed to the covert way for the planting of cannon, to oblige those who advance in their approaches to retire. 8. *Place of arms in a camp*, a large place at the head of the camp for the army to be ranged in and drawn up in battalia. There is also a place for each particular body, troop, or company, to assemble in.

(5.) *PLACE*, *COMMON*. See *COMMON PLACE*.

* *To PLACE*. *v. a.* [*placer*, Fr. from the noun.]

1. To put in any place, rank, condition, or office. —Place such over them to be rulers. *Ex. xviii. 21.*

—He placed forces in all the fenced cities. *2 Chron. xvii. 2.*

And I will place within them as a guide

My empire's conscience.

Milton.

Our two first parents, yet the two only

Of mankind in the happy garden placed.

Milton.

2. To fix; to settle; to establish.—Those accumulations had been more reasonable, if placed on inferior persons. *Dryden's Aurengz.*—God or nature has not any where placed any such jurisdiction in the first born. *Locke.* 3. To put out at interest.—

'Twas his care

To place on good security his gold.

Pope.

PLACENTA. *n. f.* in anatomy and midwifery, a soft roundish mass, found in the womb of pregnant women; which, from its resemblance to the liver, was called by the ancients *hepar uterinum*, uterine liver. See *MIDWIFERY*, *Part II. Scd.* II.

PLACENTATION. *n. f.* See *BOTANY*, *Ind.*

(1.) *PLACENTIA*, a duchy of Italy, connected with that of Parma, and included in the *Parmesan*. (See *PARMESAN*, *N^o 1.*) It is bounded on the E. by Parma, S. by the Ligurian state, and on the S. and W. by the clewant Milanese, now the department of Olona, in Italy. It is very fertile; being watered not only by the Po, but by a great number of rivulets, and surrounded with hills, abounding in all kinds of fruits. It has several salt springs, from the water of which a great deal of salt is made. It also abounds in woods, warrens, and mines of iron. Its chief rivers are the Trebbia and Nurra.

(2.) *PLACENTIA*, or *PLACENZA*, a town of Italy, and capital of the above duchy, with a bishop's see. Its names are derived from its pleasant situation, on the ancient *Æmilian* way, about half a mile from the Po, in a very fertile plain. It contains a great number of merchants, and is 3 miles in circumference. Its wall and fortifications are inconsiderable; but the citadel is strong. The streets are straight, and the principal street, called *Stradone*, is 25 paces broad and 3000 feet long, in a direct line, with 600 stone posts, for separating the foot from the carriage-way, and on both sides are 11 spacious convents. It contains 45 churches, 28 convents, and two alms-houses. The cathedral is much in the Gothic taste; but the church of the Augustines is worthy of its architect, Vignoli. In the area before the town-house stand two admirable brass equestrian statues of Alexander I. and Renatus IV. dukes of Parma and Placentia.

At

at this city begins the *Via Emilia*, which extends as far as Rimini on the Adriatic. The number of the inhabitants is about 30,000, among whom here are 2000 ecclesiastics. This city has been taken several times in the wars of Italy. The king of Sardinia took possession of it in 1744, it being ceded to him by the queen of Hungary; but it was taken from him in 1746, after a bloody battle. It has a famous university, and the inhabitants are esteemed for politeness. There is a great fair here every year on the 15th of April, which is much frequented. It is about 32 miles NW. of Parma, and 83 E. of Turin. It was taken by the French republicans, under Gen. Murat, in June 1800, after a warm action, with 2000 prisoners, and much military stores. Lon. 10. 24. E. Lat. 45. 5. N.

(3.) **PLACENTIA**, a sea port of Newfoundland, on the SE. coast: 40 miles W. of St John, and 100 E. of Cape Breton. Lon. 53. 43 W. Lat. 47. 15. N.

(4.) **PLACENTIA**, a town of Spain in Estremadura, with a good castle and bishop's see; seated on the Kera, in a pleasant plain, surrounded by mountains, 10 miles SW. of Madrid. Lon. 5. 0. W. Lat. 40. 25. N.

(5.) **PLACENTIA**, a town of Spain, in Guipuscoa, on the Deva, 25 miles SE. of Bilboa. Lon. 2. 40. W. Lat. 43. 10. N.

(6.) **PLACENTIA BAY**, an extensive bay on the E. coast of Newfoundland; which forms a good harbour for vessels, and is much frequented by ships employed in the cod fishery. The entrance is a narrow channel through which only one ship can pass at a time; but the water is deep enough for the largest, and the harbour is capacious enough to hold 150 sail, which are there secure against all winds, and can fish as quietly as in a river. The current is very strong in the entrance, so that ships must be towed through it. The great strand is large enough to dry fish to load 60 vessels. Lon. from 54° to 55° 10' W. Lat. from 47° to 47° 50' N.

PLACENTIUS, Peter, a German poet, who appears to have been extravagantly fond of his own initials; for he wrote a Latin Poem of 360 verses, entitled *Pugna Porcorum*, in which every word begins with a P. He died in 1548.

PLACENZA. See **PLACENTIA**, N° 1. and 2.

* **PLACER**. *n. f.* [from *place*.] One that places.

Thou *placer* of plants, both humble and tall.
Spenfer.

PLACETTE, John DE LA, an eminent protestant minister, born at Pontac in Bern, in 1639; and educated by his father, who was also a clergyman. He exercised his office, as a minister among the Protestants in France till the revocation of the edict of Nantes in 1685, when he retired to Denmark, where he continued till the death of the Queen, in 1711, who greatly valued his merit. After her death he went to Holland, and settled first at the Hague, and last at Utrecht, where he died in 1718, aged 79. He wrote many valuable works on religion and morality; besides some polemical pieces against the church of Rome. His treatise *upon Conscience* was translated into English by Dr Basil Kennet, in 1705.

* **PLACID**. *adj.* [from *placidus*, Latin.] 1. Gentle; quiet; not turbulent.—It conduceth unto long life, and to the more *placid* motion of the spirits, that men's actions be free. *Bacon.* 2. Soft; kind; mild.—

That *placid* aspect and meek regard,
Rather than aggravate my evil fate,
Would stand between me and thy father's ire.

Milton.

* **PLACIDLY**. *adv.* [from *placid*.] Mildly; gently.—If into a phial, filled with good spirit of nitre, you cast a piece of iron, the liquor, whose parts moved uniformly and *placidly* before, by altering its motion, it begins to penetrate and scatter abroad particles of the iron. *Boyle.*—The water easily insinuates itself into, and *placidly* diffends the tubes and vessels of vegetables. *Woodward.*

* **PLACIT**. *n. f.* [*placitum*, Lat.] Decree; determination.—We spend time in defence of their *placits*, which might have been employed upon the universal author. *Glanville.*

* **PLACKET**, or *placquet*, *n. f.* A petticoat.—You might have pinched a *placker*, it was senseless. *Shak.*—The bone-ache is the curse dependant on those that war for a *placket*. *Shak.*

PLADDAY, an island of Scotland, a mile from the isle of Arran, with a light-house, containing two different lights, to distinguish it from those of the Mulls of Kintyre, Galloway, and Cambray.

PLADIA, or **BLADIA**, a town of Prussia, in Natangen; 22 miles SW. of Königsberg.

PLADLING, a town of Lower Bavaria, on the Isar; five miles SW. of Deckendorf, and eight NW. of Osterhofen.

* **PLAGIARISM**. *n. f.* [from *plagiary*.] Theft; literary adoption of the thoughts or works of another.—With great impropriety, as well as *plagiarism*, they have most injuriously been transferred into proverbial maxims. *Swift.*

(1.) * **PLAGIARY**. *n. f.* [from *plagium*, Lat.] 1. A thief in literature; one who steals the thoughts or writings of another.—The ensuing discourse, left I chance to be traduced for a *plagiary* by him who has played the thief, was one of those that, by a worthy hand, were stolen from me. *South.*—Without invention, a painter is but a copier, and a poet but a *plagiary* of others. *Dryden's Dufur.* 2. The crime of literary theft. Not used.—*Plagiary* had not its nativity with printing, but began when the paucity of books scarce wanted that invention. *Brown.*

(2.) **PLAGIARY**, in philology, is a purloiner of another man's works, who puts them off as his own. Among the Romans, *plagiarius* was properly a person who bought, sold, or retained a freeman for a slave; and was so called, because, by the Flavian law, such persons were condemned *ad plagas*, "to be whipped." Thomasius has an express treatise *De plagio literario*, wherein he lays down the laws and measures of the right which authors have to one another's writings.—"Dictionary-writers, at least such as meddle with *arts and sciences* (as is pertinently observed by Mr Chambers), seem exempted from the common laws of *meum and tuum*; they do not pretend to set up on their own bottom, nor to treat you at their

own cost. Their works are supposed, in great measure, compositions of other people; and what they take from others they do it avowedly, in the open sun.—In effect, their quality gives them a title to every thing that may be for their purpose, wherever they find it; and if they rob, they do not do it any otherwise than as the bee does, for the public service. Their occupation is not pillaging, but collecting contributions; and if you ask them their authority, they will produce you the practice of their predecessors of all ages and nations.”

PLAGIUM, in law. See **KIDNAPPING**.

(1.) * **PLAGUE**. *n. f.* (*plague*, Dutch; *plage*, Teut. *plaga*, Latin; *ἡσμία*.) 1. Pestilence; a disease eminently contagious and destructive.—

Thou art a bile,

A plague-fore or imbois'd carbuncle

In my corrupted blood. *Shak. King Lear.*

—Many times there have been great *plagues* in dry years. *Bacon's Nat. Hist.*—

Snakes that use within thy house for shade,

Securely lurk, and, like a *plague*, invade

Thy cattle with venom. *May's Virgil.*

All those *plagues*, which earth and air had brooded,

First on inferior creatures tried their force,

And last they seized on man. *Lee and Dryden.*

2. State of misery.—I am set in my *plague*. *Psalms xxxviii. 17.* 3. Any thing troublesome or vexatious.

—'Tis the time's *plague*, when madmen lead the blind. *Shak.*—

I am not mad, too well I feel

The different *plague* of each calamity.

Shakespeare.

—Good or bad company is the greatest blessing or greatest *plague* of life. *L'Estrange.*—

Sometimes my *plague*, sometimes my darling,
Kissing to-day, to-morrow snarling. *Prior.*

(2.) The **PLAGUE**, **PESTILENCE**, or *Pestilential Fever*, is a very acute, malignant, and contagious disease; being a putrid fever of the worst kind, and seldom failing to prove mortal. Though it is generally defined a malignant fever, Diemerbroek thinks they ought to be distinguished, since the fever is not the essence of the disease, but merely a symptom or effect of it. See **MEDICINE**, *Index*. The plague, as is generally agreed, is never bred or propagated in Britain; but is frequent in the Levant, Lesser Asia, Egypt, &c. Authors are not as yet agreed concerning the nature of this dreadful distemper. Some think that insects are the cause of it, in the same way that they are the cause of blights, being brought in swarms from other climates by the wind, when they are taken into the lungs in respiration; the consequence of which is, that they mix with the blood and juices, and attack and corrode the viscera. Mr Boyle, on the other hand, thinks it originates from the effluvia or exhalations breathed in the atmosphere from noxious minerals, to which may be added stagnant waters and putrid bodies of every kind. Mr Gibbon thinks that the plague is derived from damp, hot, and stagnating air, and the putrefaction of animal substances, especially locusts. See *Gibbon's Rom. Hist.* 4^{to}. vol. iv. p. 327 — 332; where there is also a very particular account of the plague which depopulated the earth

in the time of the emperor Justinian. It is a remarkable fact, that *plagues* are sometimes partial, and that they only attack particular animals, or a particular description of persons, avoiding others altogether, or attacking them but slightly. Thus Fernelius informs us of a plague, or murrain, in 1514, which invaded only cats. Dionysius Halicarnassus mentions a plague which attacked none but maids; and that which raged in the time of Gentilis killed scarce any women, and very few but lusty men. Boterus mentions another plague, which assaulted none but the younger sort; and we have instances of the same kind of a later standing. Many methods have been adopted in different countries to prevent the importation of this dreadful scourge of the human race, and to stop the progress of infection after it has been imported. In England, mayors, bailiffs, head officers of corporations, and justices of peace, have power to tax inhabitants, houses, and lands, &c. within their precincts, for the relief of persons infected with the plague; and justices of the county may tax persons within five miles round, on a parish's inability; the tax to be levied by distress and sale of goods, or, in default thereof, by imprisonment. Infected persons going abroad, after being commanded to keep house for avoiding farther infection, may be resisted by watchmen, &c. and punished as vagrants, if they have no sores upon them; and if they have infectious sores on them, it is felony. Justices of peace, &c. are to appoint searchers, examiners, and buriers of the dead, in places infected, and administer oaths to them for the performance of their duties, &c. *Stat. 1. Jac. 1. cap. 31.* See **QUARANTINE**.

(3.) **PLAGUE**, **ANTIDOTES AGAINST THE**. The commission at Moscow having, in 1770, invented a fumigation powder, which, from several lesser experiments, had proved efficacious in preventing the infection of the plague; in order more fully to ascertain its virtue in that respect, it was determined, towards the end of the year, that ten malefactors under sentence of death should, without undergoing any other precautions than the fumigations, be confined three weeks in a lazaretto, be laid upon the beds, and dressed in the clothes, which had been used by persons sick, dying, and even dead of the plague in the hospital. The experiment was accordingly tried, and none of the ten malefactors were then infected, or have been since ill. The fumigation powder is prepared as follows. 1. *Powder of the first strength.* Take leaves of juniper, juniper-berries pounded, ears of wheat, guaiacum wood pounded, of each 6 lb; common saltpetre pounded, 8 lb; sulphur pounded, 6 lb; Smyrna tar, or myrrh, 2 lb; mix all together, which will produce a pound of the powder of fumigation of the first strength. *N. B.* A pound is 40 lb. Russian, which are equal to 35½ or 36 lb. English avoirdupoise. *Powder of the second strength.* Take southern-wood cut into small pieces, 4 lb. juniper berries pounded, 3 lb; common saltpetre pounded, 4 lb; sulphur pounded, 2½ lb; Smyrna tar, or myrrh, 1½ lb; mix the above together, which will produce half a pound of the powder of fumigation of the second strength. 3. *Odoriferous powder.* Take the root called *kalmus* cut into small pieces, 3 lb; leaves of juniper

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cut into small pieces, 4 lb. frankincense pounded grossly, 1 lb.; storax pounded, and rose flowers, 1 lb.; yellow amber pounded, 1 lb.; common salt-petre pounded, $1\frac{1}{2}$ lb.; sulphur, a quarter of a pound: mix all the above together, which will produce $9\frac{1}{2}$ lb. of the odoriferous powder. If guaiacum cannot be had, the cones of pines or firs may be used in its stead; likewise the common air of pines and firs may be used instead of myrra tar, or myrrh, and mugwort may supply the place of southernwood.

(4.) PLAGUE AT LONDON. See LONDON, § 12.

(5.) PLAGUE, DREADFUL INSTANCES OF THE, IN EUROPE. Thucydides, lib. ii. gives an account of a dreadful plague which happened at Athens about A. A. C. 430, and with which he was himself infected, while the Peloponnesians under the command of Archidamus wasted all her territory abroad; but of these two enemies the plague was by far the most severe. The most dreadful plague that ever raged at Rome was in the reign of Titus, A. D. 80. The emperor left no remedy unattempted to abate the malignity of the distemper, acting during its continuance like a father to his people. The same fatal disease again in all the provinces of the Roman empire in the reign of M. Aurelius, A. D. 167, and was followed by a dreadful famine, earthquakes, inundations, and other calamities. About A. D. 430, the plague visited Britain, just after the Picts and Scots had made a formidable invasion of the southern part of the island. It raged with uncommon fury, and swept away most of those whom the sword and famine had spared, so that the living were scarce sufficient to bury the dead. About A. D. 1348, the plague became almost general over Europe. Many authors give an account of this plague, which is said to have appeared first in the kingdom of Kathay in 1346, and to have proceeded gradually W. to Constantinople and Egypt. From Constantinople it passed into Greece, Italy, France, and Africa, and by degrees along the coasts of the ocean into Britain and Ireland, and afterwards into Germany, Hungary, Poland, Denmark, and the other northern kingdoms. According to Antonius, Abp. of Florence, the distemper carried off 60,000 people in that city. In 1656, the plague was brought from Sardinia to Naples, being introduced into the city by a transport with soldiers on board. It raged with excessive violence, carrying off in less than six months 100,000 of the inhabitants. In 1720 the city of Marseilles was visited with this destructive disease, brought in a ship from the Levant; and in seven months, during which time it continued, it carried off not less than 60,000 people. The ravages of this disease have been dreadful wherever it has made its appearance. On the first arrival of the Europeans at the island of Grand Canaria, it contained 14,000 fighting men, soon after which, two thirds of these inhabitants fell a sacrifice to the plague. The destruction it has made in Turkey in Europe, and particularly in Constantinople, must be known to every reader; and its fatal effects have been particularly heightened there by that firm belief which prevails among the people

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of predestination, &c. It is generally brought into European Turkey from Egypt; where it is very frequent, especially at GRAND CAIRO. To give even a list of all the plagues which have desolated many flourishing countries, would extend this article beyond all bounds, and minutely to describe them all is impossible. Respecting the plague which raged in Syria in 1760, we refer to the Abbe Mariti's Travels through Cyprus, Syria, and Palestine, vol. 1st, p. 278—296. This plague was one of the most malignant and fatal that Syria ever experienced; for it scarcely made its appearance in any part of the body when it carried off the patient.

(6.) PLAGUE NOT CONTAGIOUS! Among the many bold assertions advanced by modern philosophers, in the present age, we have met with none more astonishing, than that of Dr Moseley, who, in opposition to the fatal experience of all ages, asserts that the plague is "not contagious." In proof of this he quotes many medical writers ancient and modern; but what he chiefly places his confidence in, is founded on his own observations on pestilential fevers in the W. Indies, and on what is said in Berthier's account of Bonaparte's expedition into Syria. "At the time of our entry into Syria, says he, all the towns were infected by the plague, a malady which ignorance and barbarity render so fatal in the east. Those who are affected by it give themselves up for dead; they are immediately abandoned by every body; and are left to die, when they might have been saved by medicine and attention. Citizen Degenettes, principal physician to the army, displayed a courage and character which entitle him to the national gratitude. When our soldiers were attacked by the least fever, it was supposed that they had caught the plague, and these maladies were confounded. The fever hospitals were abandoned by the officers of health. Citizen Degenettes repaired in person to them, visited all the patients, felt the glandular swellings, dressed them, declared and maintained that the fever was *not* the plague, but a malignant fever with glandular swellings, which might easily be cured by attention and keeping the patient's mind easy." Degenette's views in making this distinction were highly commendable; "but certainly, says Dr Moseley, this fever was the plague." The physician, however, carried his courage so far, as to make two incisions, and to inoculate the suppurated matter from one of these buboes above his breast, and under his arm-pits, but was not affected with the malady. He thus eased the minds of the soldiers, (the first step to a cure,) and by his assiduity and attendance, a number of men attacked with the plague were cured." From these accounts, as well as from all that follows in Dr Moseley's narrative, it is evident, that Dr Moseley has never once *seen* a case of the *plague*; that he has mistaken a malignant fever for it, and erected a false hypothesis upon a series of mistaken facts.

(7.) PLAGUE, PREVENTATIVE AND CURE FOR THE. In the hospital of St Anthony at Smyrna, it has been long the practice to rub over with warm olive oil the bodies of persons infected by the plague, and it has been successful. It was

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first suggested by Mr Baldwin, the English consul, and from him adopted by *P. Luigi di Paira*, who for 27 years exposed himself to infection, by his unremitted attendance on those under this dreadful disease. During that long period Luigi found no remedy equal to that of rubbing olive oil, by the strongest friction, into the whole body of the infected person. When the body is thus rubbed, the pores being opened imbibe the oil, and a profuse perspiration takes place, by which the poisonous infection is thrown out. This operation must be performed the first day of the infection, and must be repeated till every particle of infection is removed, and the patient's whole body be in a profuse sweat. The patient's shirt and bed-clothes must not be changed till the perspiration has ceased. The operation must be performed in a very close apartment, and a fire pan kept in it, over which sugar and juniper must be thrown to promote the perspiration.—In 5 years, during which this friction with oil was employed at Smyrna, of 150 persons, attacked by the plague, the greater part were cured. This oil is also used with success as a preventative, as well as cure. *Philos. Mag.* Vol. 2.

* *To PLAGUE. v. a.* [from the noun.] 1. To infect with pestilence. 2. To infect with disease; to oppress with calamity.—

Thou art not honest, and the gods will plague thee. *Shak.*

Thus were they *plagued*

And worn with famine. *Milton.*

3. To trouble; to tease; to vex; to harass; to torment; to afflict; to distress; to torture; to embarrass; to excruciate; to make uneasy; to disturb. In this sense it is used ludicrously.—

She will *plague* the man that loves her most. *Spenser.*

—People are stormed out of their reason, *plagued* into a compliance, and forced to yield. *Collier.*—

—When a Neapolitan cavalier has nothing else to do, he falls a tumbling over his papers, to see if he can start a lawsuit, and *plague* any of his neighbours. *Addison.*

* *PLAGUILY. adv.* [from *plaguy*.] Vexatiously; horribly. A low word.—He has me so *plaguily* under the lash, I dare not interrupt him. *Dryden.*

The doctor was *plaguily* down in the hips. *Swift.*

* *PLAGUY. adj.* [from *plague*.] Vexatious; troublesome. A low word.—

Of heats,

Add one more to the *plaguy* bill. *Donne.*

What *plaguy* mischiefs and mishaps

Do dog him fill with after-claps? *Hudibras.*

PLAIAR, a town of European Turkey, in Romania; 6 miles S. of Gallipoli.

(1.) * *PLAICE. n. f.* [*plate*, Dutch.] A flat fish.—Of flat fish there are soles, flukes, dabs, and *plaice*. *Carew.*

(2.) *PLAICE*, or *PLAISE*, is the English name of a species of pleuronectes. See *PLEURONCTES*.

* *PLAID. n. f.* A striped or variegated cloth; an outer loose weed worn much by the Highlanders in Scotland: there is a particular kind worn too by the women.

PLAILLY, a town of France, in the department of the Oise; 6 miles S. of Senlis.

(1.) * *PLAIN. adj.* [*planus*, Lat.] 1. Smooth; level; flat; free from protuberances or excrescences. In this sense, especially in philosophical writings, it is frequently written *plane*: as, a *plane* superficies.—It was his policy to make all *plain* and waste. *Spenser.*—The S. and South-East sides are rocky and mountainous, but *plain* in the middle. *Sandys.*—They were wont to make their canoes or boats *plain* without, and hollow within. *Heylyn.*

To break the clouds, and make the surface *plain*. *Dryden.*

—Hilly countries afford the most entertaining prospects, though a man would chuse to travel through a *plain* one. *Addison.* 2. Open; clear; flat.—Our troops beat an army in *plain* fight and open field. *Felton.* 3. Void of ornament; simple.—

Plain without pomp, and rich without a show. *Dryden.*

Men of wealth may venture to go *plain*. *Young.*

4. Artless; not subtle; not specious; not learned; simple.—It is better to chuse men of a *plainer* sort, that are like to do that that is committed to them. *Bacon.*—Of many *plain*, yet pious christians, this cannot be affirmed. *Hammond.*—An author that writ like a *plain* man, and one whose profession was to tell truth. *Temple.*

My heart was made to fit and pair within, Simple and *plain*. *Rosset.*

Must then at once, the character to save,

The *plain* rough hero turn a crafty knave? *Pope.*

5. Honestly rough; open; sincere; not soft in language.—Give me leave to be *plain* with you. *Bacon.* 6. Mere; bare.—He that beguiled you in a *plain* accent, was a *plain* knave. *Shak.*

Some have at first for wits, then poets past, Turn'd critics next, and prov'd *plain* fools at last. *Pope.*

7. Evident; clear; discernible; not obscure.—Expressions, which to them seemed very clear and *plain*. *Clar.*

Express thyself in *plain*, not doubtful words. *Denham.*

—I can make the difference more *plain*, by giving you my method of proceeding. *Dryden.*—*Tu plain* in the history, that Esau was never subject to Jacob. *Locke.*—That children have such a right, is *plain* from the laws of God. *Locke.*—It is *plain*, that these discourses are calculated for none but the fashionable part of womankind. *Addison.*

Divide the simple, and the *plain* define. *Prior.*

8. Not varied by much art; simple.—A *plaining* long *plain*-singing voice requires. *Sidney.*

—His diet was of the *plainest* meats. *Fell.*

(2.) * *PLAIN. adv.* 1. Not obscurely. 2. Distinctly; articulately.—The string of his tongue was loosed, and he spake *plain*. *Mark* vii. 35. 3. Simply; with rough sincerity.—Goodman Faith is allowed by every body to be a *plain*-spoken person. *Addison.*

(3.) * *PLAIN. n. f.* [*plaine*, Fr.] Level ground; open field; opposed to hilly ground; often a field of battle.—In a *plain* in the land of Shinar they dwelt. *Gen.* xi. 2.—The Scots took the English for

for foolish birds fallen into their net, forsook their hill, and marched into the *plain* directly towards them. *Hayward*.—They erected their castles and habitations in the *plains* and open countries. *Davies*.—Four forth Britannia's legions on the *plain*. *Arbutnot*.—

While here the ocean gains,

In other parts it leaves wide sandy *plains*. *Pope*.

The impetuous courser pants in ev'ry vein,
And pawing seems to beat the distant *plain*. *Pope*.

(4.) *PLAIN* in geography, a town of Bavaria, in Saltzburg, 1 miles N. of Saltzburg.

(5.) A *PLAIN ANGLE* is one contained under two lines, or surfaces, in contradistinction to a solid angle. See *ANGLE*.

(6.) *PLAIN CHART*. See *CHART*.

(7.) A *PLAIN FIGURE*, in geometry, is an uniform surface; from every point of whose perimeter, right lines may be drawn to every point in the same.

(8.) *PLAIN SAILING*. See *NAVIGATION*, Part II, *Secl. I*.

(9.) *PLAIN TRIANGLES*, those included under three right lines. The doctrine is termed *plain trigonometry*. See *TRIGONOMETRY*.

(1.) * To *PLAIN*. *v. a.* [from the noun.] To level; to make even.—Upon one wing the artillery was drawn, every piece having his guard of pioneers to *plain* the ways. *Hayward*.

(2.) * To *PLAIN*. *v. n.* [*plaindre, je plains*, Fr.] To lament; to wail. Little used.—

But more I *plain*, I feel my woes the more.

Sidney.

The fox, that first this cause of grief did find,

'Can first thus *plain* his cause with words unkind.

Spenser.

The incessant weeping of my wife,
And piteous *plainings* of the pretty babes,
Forc'd me to seek delays. *Shak*.

He to himself thus *plain'd*. *Milton*.

(1.) * *PLAINDEALING*. *adj.* [*plain and deal*.] Honest; open; acting without art.—It must not be denied, but I am a *plaindealing* villain. *Shak*.—Bring a *plaindealing* innocence into a consistency with necessary prudence. *L'Estrange*.

(2.) * *PLAINDEALING*. *n. f.* Management void of art; sincerity.—I am no politician; and was ever thought to have too little wit, and too much *plaindealing* for a statesman. *Denham*.—

It looks as fate with nature's law may strive,
To shew *plaindealing* once an age would thrive.

Dryden.

PLAIN DU NORD, a town of Hispaniola, 39 miles SE. of Port de Paix.

PLAINNE, a town of France, in the dep. of Maine and Loire; 15 miles SW. of Montreuil Bellay.

(1.) *PLAINFIELD*, a flourishing town of Connecticut in Windham county, pleasantly seated on a rising ground, on the E. bank of the Quinebaug, 24 miles NE. of Northwick. It has 2 presbyterian churches and an academy. It is 12 miles E. of Windham, and 237 from Philadelphia.

(2.) *PLAINFIELD*, a township of Massachusetts, in Hampshire county; containing 458 citizens in 1795. It is 120 miles W. by N. of Boston.

(3.) *PLAINFIELD*, a township of New Hampshire, in Cheshire county, on the E. bank of the Connecticut; containing 1024 citizens in 1795.

(4.) *PLAINFIELD*, a township of Pennsylvania, in Northampton county.

* *PLAINLY* *adv.* [from *plain*.] 1. Levelly; flatly. 2. Not subtly; not speciously. 3. Without ornament. 4. Without gloss; sincerely.—You write to me with the freedom of a friend, dealing *plainly* with me in the matter. *Pope*. 5. In earnest; fairly.—They gave ground, and at last *plainly* run to a safe place. *Clarend.* 6. Evidently; clearly; not obscurely.—They are not only set down, but also *plainly* set down in scripture. *Hooker*.—Coriolanus, out of his carelessness, lets them *plainly* see't. *Shak*.—One may perceive *plainly*, that he thought the Anti-nicene church, both before and after Origen, to be of a very contrary judgment to that which he condemns in Lucian and Origen. *Waterland*.—

Thy great deliverer, who shall bruise
The serpent's head; whereof to thee anon
Plainlier shall be reveal'd. *Milton*.

—We see *plainly* that we have the means. *Addison*.

* *PLAINNESS*. *n. f.* [from *plain*.] 1. Levelness; flatness. 2. Want of ornament; want of show.—

We in our *plainness* may be justly proud.

Dryden.

Modest *plainness* sets off sprightly wit. *Pope*.
3. Openness; rough sincerity.—I have not chosen Dametas for his fighting nor for his discouraging, but for his *plainness* and honesty. *Sidney*.—

Your *plainness* and your shortness please me well.

Shak.

When pow'r to flatt'ry bows; to *plainness* honour

Is bound, when majesty to folly falls. *Shak*.
—*Plainness* and freedom, an epistolary style required. *Wake*. 4. Artlessness; simplicity.—

Unthinking *plainness* fo o'erspreads thy mind,
That thou could'st seriously persuade the crowd
To keep their oaths. *Dryden*.

* *PLAINT*. *n. f.* [*plainte*, Fr.] 1. Lamentation; complaint; lament.—

Then pour out *plaint*, and in one word say this;

Helpless his *plaint*, who spoils himself of bliss.

Sidney.

Booleless are *plaints*, and cureless are my wounds.

Shak.

From inward grief

His bursting passion into *plaints* thus pour'd.

Milton.

2. Exprobation of injury.—There are three just grounds of war with Spain; one of *plaint*, two upon defence. *Bacon*. 3. Expression of sorrow.—

How many children's *plaints*, and mothers
cries!

Daniel.

Yet even these gentle walls allow my moan,
Whose doleful echoes to my *plaints* agree.

Wotton.

Listening where the hapless pair
Sat in their sad discourse, and various *plaint*,
Thence gather'd his own doom.

Milton.

Receive these *plaints*.

Waller.

* *PLAINFUL*. *adj.* [*plaints* and *full*.] Complaining

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plaining; audibly forlornful.—To what a sea of miseries my *plaintful* tongue doth lead me. *Sidney.*

(1.) * *PLAINTIFF*. *adj.* [*plaintif*, Fr.] Com-
plaining. A word not in use.—

His younger son on the polluted ground,
First fruit of death, lies *plaintiff* of a wound
Giv'n by a brother's hand. *Prior.*

(2.) * *PLAINTIFF*. *n. f.* [*plaintif*, Fr.] He
that commences a suit in law against another: op-
posed to the *defendant*.—The *plaintiff* proved the
debt by three positive witnesses. *L'Esrange*.—You
and I shall talk in cold friendship at a bar before
a judge, by way of *plaintiff* and defendant. *Dryden.*

In such a cause the *plaintiff* will be hiss'd. *Pope.*

* *PLAINTIVE*. *adj.* [*plaintif*, Fr.] Complain-
ing; lamenting; expressive of sorrow.—

His careful mother heard the *plaintive* sound.
Dryden.

The goddess heard,
Rose like a morning mist, and thus begun
To sooth the sorrows of her *plaintive* son. *Dryd.*
Can nature's voice

Plaintive be drown'd? *Prior.*

Leviathans in *plaintive* thunders cry. *Young.*

PLAINVILLE, a town of France, in the
dep. of the Oise; 6 miles E. of Breteuil.

* *PLAINWORK*. *n. f.* [*plain* and *work*.] Nec-
dlework as distinguished from embroidery; the
common practice of sewing or making linen gar-
ments.—

She went to *plainwork*. *Pope.*

PLAJOW, a town in the island of Bornco, 150
miles N. of Banjar-Massin.

(1.) PLAISANCE, a town of France, in the
dep. of the Gers; 11 miles SSE. of Nagaro, and
23 W. of Auch.

(2.) PLAISANCE, a town of Hispaniola, 36 miles
SW. of Cape Francois.

PLAISE. See *PLEURONECTES*.

* *PLAIT*. *n. f.* [corrupted from *plait* or *ply*,
from *to ply*, or *fold*.] A fold; a double.—

These *plaits* and folds the sound restrain,
That it the organ may more gently touch.

Nor shall thy lower garments artful *plait*,
Arm thy chaste beauties with a modest pride,
And double ev'ry chain they seek to hide.

—'Tis very difficult to trace out the figure of a
vest through all the *plaits* and foldings of the dra-
pery. *Addison.*

* *To PLAIT*. *v. a.* [from the noun.] 1. To
fold; to double.—

The busy sylphs surround their darling care,
Some fold the sleeve, while others *plait* the gown.

Will she on Sunday morn thy neckcloth *plait*?

2. To weave; to braid.—Let it not be outward
adornings of *plaiting* the hair. 1. *Peter*, iii. 3.—

I'll weave her garlands, and I'll *plait* her hair.

—Your hands have not been employed in *plaiting*
the hair, and adorning your persons. *Laqu.*

3. To intangle; to involve.—

Time shall unfold what *plaited* cunning hides.

* *PLAITER*. *n. f.* [from *plait*.] He that *plaits*.

PLAK, a town of Hungary, 5 miles S. of Cal-
chau.

(1.) * *PLAN*. *n. f.* [*plan*, French.] 1. A scheme;
a form, a model.—

Remember, O my friends, the laws, the rights.
The generous *plan* of power delivered down
From age to age by your renown'd forefathers.

2. A plot of any building or ichnography; form
of any thing laid down on paper.—

Artists and *plans* relieve'd my solemn hours.

(2.) *PLAN*, in general, denotes the representa-
tion of something drawn on a plane; such are
maps, charts, ichnographies, &c. See *MAP*,
CHART, &c.

(3.) *PLAN*, in architecture (§ 1, *def.* 2.) is par-
ticularly used for a draught of a building, such as
it appears, or is intended to appear on the ground,
showing the extent, division, and distribution of
its area or ground-plot into apartments, rooms,
passages, &c. To render plans intelligible, it is
usual to distinguish the masses with a black wash;
the projections on the ground are drawn in tell
lines, and those supposed over them in dotted lines.
The augmentations or alterations to be made are
distinguished by a colour different from what is
already built; and the tints of each plan made
lighter as the stories are raised. In large buildings
it is usual to have 3 several plans for the 3 first
stories.

(4.) *PLAN*, in geography, a town of Bohemia,
in Piten.

(5.) *PLAN*, a town of France, in the dep. of the
Upper Garonne; 6 miles S. of Rieux.

(6.) *PLAN*, a town of Spain, in Arragon; 15
miles S. of Ainsa.

(7.) *PLAN DE BAIS*, a town of France, in the
dep. of the Drome; 9 miles NE. of Crest.

(8.) *PLAN*, GEOMETRICAL, is that wherein the
solid and vacant parts are represented in their nat-
ural proportions.

(9.) *PLAN*, PERSPECTIVE, is that exhibited by
degradations or diminutions, according to the
rules of perspective. See *PERSPECTIVE*.

(10.) *PLAN*, RAISED, OF A BUILDING, is the
same with what is otherwise called an *elevation* or
orthography. See *ORTHOGRAPHY*, § 3, 4.

* *To PLAN*. *v. a.* [from the noun.] To scheme;
to form in design.—

Plan with all thy arts the scene of fate. *Pope.*

(1.) PLANANA, a town of Spain, in Valentia; 11
miles E. of Segorbo.

(2.) PLANNA, a town of Sweden, in W. Goth-
land, 30 miles ENE. of Uddevalla.

* *PLANARY*. *adj.* Pertaining to a plane. *Dis.*

PLANASIA, in ancient geography; 1. an
island in the Tyrrhene Sea; 2. a town on the banks
of the Rhone; 3. an island on the coast of Gaul,
where Tiberius ordered Agrippa the grandson of
Augustus to be murdered. *Tac. Ann.* i. 3.

* *PLANCHÉ*. *adj.* [from *plancher*.] Made of
boards.—

To that vineyard is a *planché* gate,
That makes his opening with this bigger key.

* *PLANCHER*. *n. f.* [*plancher*, French.] A
floor of wood. Not used.—Oak, cedar and che-
nut.

are the best builders; some are best for *plan-*
as, as deals *Baron*.

LANCHES, a town of France, in the dep. of
Jura, 7 miles SE. of Nozeroy, and 17 SE. of
ignoy.

PLANCHING, *n. f.* In carpentry, the laying
floor in a building. *Dict.*

LANCOE, a town of France, in the dep. of
North Coasts, 8 miles NW. of Dinan, and 11
E. of Lamballe.

PLANCUS, Lucius MUNATIUS, a writer
the Augustan age, but a very versatile charac-

He was an orator and a disciple of Cicero,
was with Cæsar in Gaul, was a governor of a
province in Gallia Celtica, (where he built Lug-

num, now Lyons;), and was made consul
with Brutus. He then favoured the repub-

an cause, but afterwards deserted to Cæsar. He
graced himself still more, by becoming a mean

traveller of Antony and Cleopatra, to please
him he acted as a stage dancer, and in a come-

perfonated the sea-god Glaucus, by dancing
like naked, with his body painted green, a

own of reeds on his head, and the tail of a large
h appended to his back. Finding that this sy-

phantic adulation procured him contempt in-
stead of approbation, even from Antony, he de-

serted to Octavius, before the battle of Actium;
he received him with great marks of respect;

high Plancus returned by proposing in the se-
ate to confer on him the title of Augustus.

About this period Horace dedicated his 7th Ode
to him. The elegance of his *Letters to Cicero*,

which are still extant, prove that he was not un-
worthy of a literary compliment.

(1.) **PLANCUS**. See MUNATIUS.

(3.) **PLANCUS**, Francis, M.D. was born at
Amiens in 1696, and was author of some works

which do honour to his memory. 1. A complete
system of Surgery, in 2 vols. 12mo. 2. A choice

library of Medicine: this curious collection, con-
tinued and completed by M. Goullin, makes 9 vols.

10, or 12 vols. 12mo. 3. A Translation of Van-
der Wiel's Observations on Medicine and Surgery,

1758, 2 vols. 12mo. Plancus was the editor of
various editions of works on medicine and sur-
gery, and enriched them with notes. He died Sept.

19, 1661, aged 69.

PLANCY, a town of France, in the dep. of
the Aube, 7½ miles W. of Arcis.

(1.) * **PLANE**, *n. f.* [*planus*, Lat. Plain is com-
monly used in popular language, and *plane* in geo-

metry.] 1. A level surface.—Comets, as often as
they are visible to us, move in *planes* inclined to

the *plane* of the equipick in all kinds of angles.
Bentley.—Projectiles would ever move on in the

same right line they did not the air, their own gravity,
or the ruggedness of the *plane*, on which they

move, stop their motion.—*Obeys*. [*Plane*, Fr.]
An instrument by which the surface of boards is

smoothed.—The iron is set to make an angle of
45° with the sole of the *plane*. *Moxon*.

(2.) **PLANE**, in geometry, denotes a surface that
lies evenly between its bounding lines; and as a

right line is the shortest extension from one point
to another, so a *plane* surface is the shortest ex-

extension from one line to another.

(3.) **PLANE**, in astronomy, conics, &c. is fre-

quently used for an imaginary surface, supposed
to cut and pass through solid bodies; and on this
foundation is the whole doctrine of conic sections
built. See ASTRONOMY, CONIC SECTIONS, &c.

(4.) **PLANE**, in joinery, (§ 1. def. 2.) consists of
a piece of wood, very smooth at bottom, as a
stock or shaft; in the middle of which is an aper-
ture, through which a steel edge, or chisel, placed
obliquely passes; which, being very sharp, takes
off the inequalities of the wood along which it
slides.

(5.) **PLANE**, INCLINED. See INCLINED PLANE,
and MECHANICS, Part II. Sect. IV.

(6.) **PLANE** OF PROJECTION, in the stereogra-
phic projection of the sphere, is that on which
the projection is made, corresponding to the per-
spective plane. See PROJECTION.

(7.) **PLANE**, PERSPECTIVE, in perspective, is
supposed to be pellucid, and perpendicular to the
horizon; the horizontal plane, supposed to pass
through the spectator's eye, parallel to the hori-
zon; the geometrical plane, likewise parallel to
the horizon, wherein the object to be represented
is supposed to be placed, &c. See PERSPECTIVE.

(8.) **PLANES**, in mechanics, are either horizon-
tal; that is, parallel to the horizon, or inclined
thereto. See MECHANICS. The determining how
far any given plane deviates from an horizontal
line, makes the whole business of levelling. See
LEVELLING.

(9.) **PLANE** SAILING. See NAVIGATION, Part
II. Sect. I.

(10.) **PLANES** OF REFLECTION AND REFRACTION,
in optics, are those drawn through the inci-
dent and reflected or refracted rays. See OPTICS,
Index.

(11.) * **PLANE**-TREE, *n. f.* [*platanus*, Lat. *plane*,
platane, Fr.]—The *plane*-tree hath an amentaceous
flower consisting of several slender stamina, which
are collected into spherical little balls, and are bar-
ren; but the embryos of the fruit, which are pro-
duced on separate parts of the same trees, are tu-
rigid, and afterwards become large spherical balls,
containing many oblong seeds intermixed with
down: it is generally supposed, that the intro-
duction of this tree into England is owing to
lord chancellor Bacon. *Miller*.

The beech, the swimming alder, and the *plane*.
Dryden.

(12.) **PLANE** TREE, in botany. See PLATANUS.

* **To PLANE**, *v. a* [*planer*, Fr. from the noun.]
1. To level; to smooth; to free from inequalities.

—The foundation of the Roman caufeway was
made of rough stone, joined with a most firm ce-
ment; upon this was laid another layer of small
stones and cement; to *plane* the inequalities of
rough stone, in which the stones of the upper
pavement were flit. *Arbutnot*. 2. To smooth
with a plane.—These hard woods are more pro-
perly termed than *plained*. *Moxon*.

(1.) * **PLANET**, *n. f.* [*planeta*, Latin; *planète*,
planete, Fr.]—Planets are the erratic or wander-
ing stars, and which are not, like the fixed ones,
always in the same position to one another; we
now number the earth among the primary planets,
because we know it moves round the sun; as Sa-
turn, Jupiter, Mars, Venus, and Mercury do; and
that in a path or circle between Mars and Venus;
and

and the moon is accounted among the secondary planets or satellites of the primary, since the moves round the earth: all the planets have, besides their motion round the sun, which makes their year, also a motion round their own axes, which makes their day; as the earth's revolving so makes our day and night: it is more than probable, that the diameters of all the planets are longer than their axes: we know 'tis so in our earth; and Flamsteed and Cassini found it to be so in Jupiter: Sir Isaac Newton asserts our earth's equatorial diameter to exceed the other about 34 miles; and indeed else the motion of the earth would make the sea rise so high at the equator, as to drown all the parts thereof. *Harris.*—

Barbarous villains? hath this lovely face

Ru'd like a wand'ring planet over me,

And could not enforce them to relent? *Shak.*

And planets, planet struck, recal eclipse

Then suffer'd. *Milton.*

—There, are seven planets or errant stars in the lower orbs of heaven. *Brown.*—The Chaldeans were much devoted to astrological devices, and had an opinion that every hour of the day was governed by a particular planet, reckoning them according to their usual order, Saturn, Jupiter, Mars, Venus, Mercury, Luna. *Wilkins.*

(2.) A PLANET is a celestial body, revolving round the sun as a centre, and continually changing its position with respect to the fixed stars; whence the name planet, *πλανητης*, Gr. from *πλανω*, to wander. The planets are usually distinguished into primary and secondary. The primary ones, called by way of eminence planets, are those which revolve round the sun as a centre; and the secondary planets, more usually called satellites or moons, are those which revolve round a primary planet as a centre, and constantly attend it in its revolution round the sun. The primary planets are again distinguished into superior and inferior. The superior planets are those farther from the sun than our earth; as Mars, Jupiter, Saturn, and the Georgium Sidus; and the inferior planets are those nearer the sun than our earth, as Venus and Mercury. See ASTRONOMY, Index. That the planets are opaque and inhabited bodies, like our earth, is thought probable for the following reasons: 1. Since in Venus, Mercury, and Mars, only that part of the disk illuminated by the sun is found to shine; and again, Venus and Mercury, when between the earth and the sun, appear like dark spots or macule on the sun's disk; it is evident, that Mars, Venus, and Mercury, are opaque bodies, illuminated by the borrowed light of the sun. And the same appears of Jupiter, from its being void of light in that part to which the shadow of the satellites reaches, as well as in that part turned from the sun; and that his satellites are opaque, and reflect the sun's light, is clearly shown. As Saturn, with his ring and satellites, only yield a faint light, fainter considerably than that of the fixed stars, though these be vastly more remote; and than that of the rest of the planets; it is past doubt, that he too with his attendants are opaque bodies. 2. Since the sun's light is not transmitted through Mercury and Venus, when placed against him, it is plain they are dense

opaque bodies; which is likewise evident of Jupiter, from his hiding the satellites in his shadow; and therefore by analogy, the same may be concluded of Saturn. 3. From the variable spots of Venus, Mars, and Jupiter, it is evident these planets have a changeable atmosphere; which changeable atmosphere may, by a like argument, be inferred of the satellites of Jupiter; and therefore, by similitude, the same may be concluded of the other planets. 4. In like manner, from the mountains observed in Venus, the same may be supposed in the other planets. 5. Since, then, Saturn, Jupiter, and the satellites of both, Mars, Venus, and Mercury, are opaque bodies shining with the sun's borrowed light, are furnished with mountains, and encompassed with a changeable atmosphere; they have, of consequence, waters, seas, &c. as well as dry land, and are bodies like the moon, and therefore like the earth. And hence it seems also highly probable, that the other planets have their animal inhabitants as well as our earth. *O. E. D.* See ASTRONOMY, Index.

(3.) PLANETS, NEW. A new planet was discovered by M. Piazzi, an Italian astronomer, between Mars and Jupiter, on the first of January, 1801. This discovery had been expected by Prof. M'Laurin and others in the 18th century. A writer in the *Courier*, who signs C. L. and who, in reviewing the Athenian Letters in the *New London Review*, had hinted his expectation of it in March 1800, and offered conjectures as to its size, probable distance, apparent magnitude, and degree of light, proposes that it should be called *MINERVA*, as the most proper name for a new planet discovered in this age of science. The late Prof. Minto proposed the same name for the last discovered planet, called by British astronomers *GEORGIUM SIDUS*; but more generally by foreigners *HERSCHELL*, after its discoverer. Other two new planets were discovered by Dr Olbers, on the 28th March 1802, and proposed to be called *CERES* and *PALLAS*. They were seen by Mr Harding, astronomer, assistant to Dr Schroeter, on the 19th Feb. 1803. They appeared under 270° right ascension, and 78° N. declination.

PLANETARIUM, *n. s.* an astronomical machine, so called from its representing the motions, orbits, &c. of the planets, agreeable to the Copernican system. See ASTRONOMY, Index; and Plate XXXII.

(1.) * PLANETARY. *adj.* [*planetaire*, French; from *planet*]. 1. Pertaining to the planets.—

Their planetary motions and aspects. *Milton.*

Describe the stars and planetary way,

And trace the footsteps of eternal day. *Grav.*

2. Under the dominion of any particular planet.

Darkling they mourn their fate, whom Circe's power,

That watch'd the moon and planetary hour,

With words and wicked herbs, from human kind

Had alter'd. *Dryden.*

—I was born in the planetary hour of Saturn, and,

I think, I have a piece of that leaden planet in me.

Spectator. 3. Produced by the planets.—

Here's gold, go on;

Be as a planetary plague;

—We make guilty of our disasters the sun, the moon,

Shak.

moor,

noon, and the stars, as if we were villains by planetary influence. *Shak.* 4. Having the nature of a planet; erratic.—

We behold bright planetary Jove,

Sublime in air. *Blackmore.*

(2.) **PLANETARY DAYS.**—Among the ancients, he week was divided among the seven planets, each planet having its day. This we learn from Dion Cassius and Plutarch, *Sympo.* l. 4. q. 7. Herodotus adds, that it was the Egyptians who first discovered what god, that is, what planet, presides over each day; for that among this people the planets were directors. And hence it is, that in most European languages the days of the week are still denominated from the planets; Sunday, Monday, &c. See **WEEK**.

(3.) **PLANETARY HOURS,** 12th parts of the artificial day and night; so called, because, according to astrologers, a new planet predominates every hour, and the day is denominated from that which predominates the first hour of it, as Monday from the moon, &c. These hours are double the length of the civil hour. They are still used by the Jews.

(4.) **PLANETARY SYSTEM** is the system or assemblage of the planets, primary and secondary, moving in their respective orbits, round their common centre the sun. See **ASTRONOMY, Ind.**

(5.) **PLANETARY YEARS,** the periods of time in which the several planets make their revolutions round the sun or earth.—As from the proper revolution of the sun, the solar year takes its original, so from the proper revolutions of the rest of the planets about the earth, so many sorts of years do arise, viz. the Saturnian year, which is defined by 29 Egyptian years, 174 hours, 58 minutes, equivalent in a round number to 30 solar years.—The Jovial year, containing 317 days, 14 hours, 59 minutes.—The Martial year, containing 321 days, 23 hours, 31 minutes.—For Venus and Mercury, as their years, when judged of with regard to the earth, are almost equal to the solar year, they are more usually estimated from the sun, the true centre of their motions; in which case the former is equal to 224 days, 16 hours, 50 minutes; the latter to 87 days, 23 hours, 14 minutes.

* **PLANETICAL. adj.** [from *planet*.] Pertaining to planets.—Add the two Egyptian days in every month, the eclipses of sun and moon, conjunctions and oppositions *planetical*. *Brown.*

* **PLANETSTRUCK. adj.** [*planet* and *strike*.] Blasted; *fidere afflatus*.—

Since I saw you, I have been *planet-struck*. *Suckling.*

PLANIEZ, an island of France, in the dep. of the Mouths of the Rhone, near the coast, in the road of Marseilles.

* **PLANIFOLIOUS. adj.** [*planus* and *folium*, Latin.] Flowers are so called, when made up of plain leaves, set together in circular rows round the centre, whose face is usually uneven, rough, and jagged. *DiB.*

* **PLANIMETRICAL. adj.** [from *planimetry*.] Pertaining to the mensuration of plane surfaces.

(1.) * **PLANIMETRY. n. f.** [*planus*, Latin, and *metron*; *planimetria*, Fr.] The mensuration of plane surfaces.

(2.) **PLANIMETRY** is that part of geometry which considers lines and plain figures, without considering their height or depth. See **GEOMETRY**.

* **PLANIPETALOUS. adj.** [*planus*, Lat. and *petala*, Gr.] Flat-leaved, as when the small flowers are hollow only at the bottom, but flat upwards, as in dandelion and succory. *DiB.*

* **To PLANISH. v. a.** [from *plane*.] To polish; to smooth. A word used by manufacturers.

(1.) * **PLANISPHERE. n. f.** [*planus*, Latin; and *sphere*.] A sphere projected on a plane; a map of one or both hemispheres.

(2.) **PLANISPHERE** signifies a projection of the sphere, and its various circles on a plane. See **MAP**, and **PROJECTION**.

PLANITZ, a town of Germany, in the circle of Upper Saxony, and in Erzeburg; three miles E. of Zwickaw.

* **PLANK. n. f.** [*planche*, Fr.] A thick strong board.—They gazed on their ships, seeing them so great, and consisting of divers planks. *Abbot.*

The doors of plank were. *Chapman.*

The smoothed plank new rubbed with balm.

Milton.

—Some Turkish bows are of that strength, as to pierce a plank of six inches. *Wilkins.*

Deep in their hulls our deadly bullets light, And through the yielding planks a passage find.

Dryden.

Late I saw adrift disjointed planks. *Dryd.*

* **To PLANK, v. a.** [from the noun.] To cover or lay with planks.—If you do but plank the ground over, it will breed saltpetre. *Bacon.*

The sides were planked with pine. *Dryden.*
PLANKENBERG, a town of Germany, in Austria; four miles SSW. of Tulken.

PLANKENSTEIN, a town of Germany, in Stiria; four miles S. of Windisch Weistritz.

PLANKENWARD, a town of Germany, in Stiria; eight miles W. of Graz.

PLANO, an island of the Mediterranean, in the bay of Alicant; about a mile and an half in length.

* **PLANOCONICAL. adj.** [*planus* and *conus*.] Level on one side, and conical on others.—Some few are *planoconical*, whose superficies is in part level. *Grew.*

* **PLANOCONVEX. n. f.** [*planus* and *convexus*.] Flat on the one side and convex on the other.—It took two object-glasses, the one a *plano-convex* for a 14 feet telescope, and the other a large double convex for one of about 50 feet. *Newton.*

PLANSCHWITZ, a town of Upper Saxony, in Vogtland; three miles W. of Oelshintz.

(1.) * **PLANT. n. f.** [*plant*, Fr. *planta*, Latin.] 1. Any thing produced from seed; any vegetable production.—What comes under this denomination, Ray has distributed under 27 genders or kinds: 1. The imperfect *plants*, which do either totally want both flower and seed, or else seem to do so. 2. *Plants* producing either no flower at all, or an imperfect one, whose seed is so small as not to be discernible by the naked eye. 3. Those whose seeds are not so small, as singly to be invisible, but yet have an imperfect or staminate flower; i. e. such a one, as is without the petals, having

having only the *lamina* and the *perianthium*. 4. Such as have a compound flower, and emit a kind of white juice or milk when their stalks are cut off or their branches broken off. 5. Such as have a compound flower of a discous figure, the seed pappous, or winged with downe, but emit no milk. 6. The herbæ *capitatae*, or such whose flower is composed of many small, long fistulous or hollow flowers gathered round together in a round button or head, which is usually covered with a squamous or scaly coat. 7. Such as have their leaves entire and undivided into jaggs. 8. The corymbiferous plants, which have a compound discous flower, but the seeds have no downe adhering to them. 9. *Plants* with a perfect flower, and having only one single seed belonging to each single flower. 10. Such as have rough, hairy, or bristly seed. 11. The umbelliferous plants, which have a pentapetalous flower, and belonging to each single flower are two seeds, lying naked and joining together; they are called umbelliferous, because the plants with its branches and flowers, hath an head like a lady's umbrellæ: [1.] Such as have a broad flat seed almost of the figure of a leaf, which are encompassed round about with something like leaves. [2.] Such as have a longish seed, swelling out in the middle, and larger than the former. [3.] Such as have a shorter seed. [4.] Such as have a tuberosè root. [5.] Such as have a wrinkled, channelled, or striated seed. 12. The stellate plants, which are so called, because their leaves grow on their stalks at certain intervals or distances, in the form of a radiant star; their flowers are really monopetalous, divided into four segments, which look like so many petals; and each flower is succeeded by two seeds at the bottom of it. 13. The *asperifolia*, or rough-leaved plants; they have their leaves placed alternately, or in no certain order on their stalks; they have a monopetalous flower cut or divided into five partitions, and after every flower there succeed usually four seeds. 14. The *suffruticosæ*, or verticillate plants; their leaves grow by pairs on their stalks, one leaf right against another; their leaf is monopetalous, and usually in form of an helmet. 15. Such as have naked seeds, more than four, succeeding their flowers, which therefore they call polyspermæ plantæ *femine nudo*; by naked seeds, they mean such as are not included in any feed-pod. 16. Bacciferous plants, or such as bear berries. 17. Multifiliquous, or corniculate plants, or such as have, after each flower, many distinct, long, slender, and many times crooked cafes or siliquæ, in which their seed is contained, and which, when they are ripe, open themselves, and let the seeds drop out. 18. Such as have a monopetalous flower, either uniform or disform, and after each flower a peculiar feed-case containing the seed, and this often divided into many distinct cells. 19. Such as have an uniform, tetrapetalous, flower, but bear these seeds in oblong filiquous cafes. 20. Vasculiferous plants, with a tetrapetalous flower, but often anomalous. 21. Leguminous plants, or such as bear pulse, with a papilionaceous flower. 22. Vasculiferous plants, with a pentapetalous flower; these have, besides the common calyx, a peculiar case containing their seed, and their flower con-

sisting of five leaves. 23. Plants with a true bulbous root, which consists but of one round ball or head, out of whose lower part go many fibres to keep it firm in the earth; the plants of this kind come up but with one leaf; they have no footstalk, and are long and slender; the seed-vessels are divided into three partitions; their flower is hexapetalous. 24. Such as have their fruits approaching to a bulbous form; these emit, at first coming up, but one leaf, and in leaves, flowers and roots resemble the true bulbous plant. 25. Culmiferous plants, with a grassy leaf, are such as have a smooth hollow-jointed stalk, with one sharp-pointed leaf at each joint, encompassing the stalk, and set out without any foot-stalk; their seed is contained within a chaffy husk. 26. Plants with a grassy leaf, but not culmiferous, with an imperfect or staminous flower. 27. Plants whose place of growth is uncertain and various, chiefly water plants.—

Butchers and villains,

How sweet a plant have you untimely cropt!

Shak.

—Between the vegetable and sensitive province there are *plant-animals*. *Hale*.—The next species of life above the vegetable, is that of sense; where-with some of those productions, which we call *plant-animals*, are endowed. *Grew*.—It continues to be the same plant, as long as it partakes of the same life, though that life be communicated to new particles of matter, vitally united to the living plant, in a like continued organization, conformable to that sort of plants. *Locke*.—

Every plant that drinks the morning dew.

Pope.

Some plants the sun-shine ask, and some the shade.

Harte.

2. A sapling.—A man haunts the forest, that abuses our young plants with carving Rosalind on their barks. *Shak*.—

Take a plant of stubborn oak;

And labour him.

Dryden.

3. [*Planta*, Lat.] The sole of the foot. *Ainsworth*.

(2.) PLANT, in natural history, is defined to be an *organical* body, destitute of sense and spontaneous motion, adhering to another body in such manner as to draw from it its nourishment, and having a power of propagating itself by seeds. The vegetation and economy of plants is one of those subjects in which our knowledge is extremely circumscribed. A total inattention to the structure and economy of plants is the chief reason of the small progress that has been made in the principles of vegetation, and of the instability and fluctuation of our theories concerning it; for which reason we shall give a short description of the structure of plants. See 10, 14, 17, 19, 27, 32.

(3.) PLANT, BASTARD SENSITIVE. See *ÆSCYCHNOME*.

(4.) PLANT, BURNING THORNY. See *EUPHORBIA*, N° 4.

(5.) PLANT, EGG. See *SOLANUM*, N° 4.

(6.) PLANT, HUMBLE. See *MIMOSA*, N° 10.

(7.) PLANT, MOVING. See *HEDYSARUM*, N° 2. The motions of this plant are so extraordinary, and so greatly resemble those of animals, that they have been adduced as a strong proof of the perception and sensation of plants (see § 21.); but

ut still they afford no decisive evidence. See
24; AVERROES, N^o 3; DIONÆA; & MOTION.
(8.) PLANT, SENSITIVE. See MIMOSA.
(9.) PLANTS, ANIMAL. See ACTINIA, ANI-
MAL FLOWER, § 1—5; CORALLINES, POLYPUS,
and ZOOPHYTES.

(10.) PLANTS, CIRCULATION OF THE SAP IN.
concerning this there have been great disputes;
some maintaining, that the vegetable sap has a
circulation analogous to the blood of animals;
while others affirm, that it only ascends in the
day-time, and descends again in the night. In
favour of the doctrine of circulation, it has been
argued, that upon making a transverse incision into
the trunk of a tree, the juice which runs out pro-
ceeds in greater quantity from the upper than the
lower part; and the swelling in the upper lip is
also much greater than in the lower. It appears,
however, that when two similar incisions are made,
one near the top and the other near the root, the
upper expends much more sap than the former.
Hence it is concluded, that the juice ascends by
one set of vessels and descends by another. But,
to show this clearly, it would be necessary first to
prove, that there is in plants, as in animals, some
kind of centre from which the circulation begins,
and to which it returns; but no such centre has
been discovered by any naturalist; neither is there
the least provision apparently made whereby the
sap might be prevented from descending in the
very same vessels through which it ascends. In
the lacteal vessels of animals, which we may sup-
pose to be analogous to the roots of vegetables,
there are valves which effectually prevent the
chyle when once absorbed from returning into the
arteries; but no such thing is observed in the
vessels of vegetables; whence it must be very pro-
bable, that when the propelling force ceases, the
juice descends by the very same vessel through
which it ascended. This matter, however, has
been cleared up almost as well as the nature of the
subject will admit of, by the experiments of Dr
Boyle. These experiments are so numerous, that
or a particular account of them we must refer to
his work itself; however, his reasoning against
the circulation of the sap will be sufficiently intel-
ligible without them. "We see (says he), in
many of the foregoing experiments, what quanti-
ties of moisture trees daily imbibe and perspire:
now the celerity of the sap must be very great, if
that quantity of moisture must, most of it, ascend
to the top of the tree, then descend, and ascend
again before it is carried off by perspiration. The
effect of a circulation in vegetables seems in some
measure to be supplied by the much greater quan-
tity of liquor which the vegetable takes in, than
the animal, whereby its motion is accelerated;
for we find the sun-flower, bulk for bulk, im-
bibes and perspires 17 times more fresh liquor
than a man, every 24 hours. Besides, Nature's
great aim in vegetables being only that the ve-
getable life be carried on and maintained, there
was no occasion to give its sap the rapid motion
which was necessary for the blood of animals. In
animals, it is the heart which sets the blood in
motion, and makes it continually circulate; but
in vegetables we can discover no other cause of

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the sap's motion but the strong attraction of the
capillary sap-vessels, assisted by the brisk undu-
lations and vibrations caused by the sun's warmth,
whereby the sap is carried up to the top of the
tallest trees, and is there perspired off through the
leaves: but when the surface of the tree is great-
ly diminished by the loss of its leaves, then also
the perspiration and motion of the sap is propor-
tionably diminished, as is plain from many of the
foregoing experiments: so that the ascending ve-
locity of the sap is principally accelerated by the
plentiful perspiration of the leaves, thereby making
room for the fine capillary vessels to exert their
vastly attracting power, which perspiration is ef-
fected by the brisk rarefying vibrations of warmth;
a power that does not seem to be any ways well
adapted to make the sap descend from the tops
of vegetables by different vessels to the root. The
instances of the jessamine tree, and of the pas-
sion tree, have been looked upon as strong proofs
of the circulation of the sap, because their branches,
which were far below the inoculated bud, were
gilded: but we have many visible proofs in the
vine, and other bleeding trees, of the sap's re-
ceding back, and pushing forwards alternately, at
different times of the day and night. And there
is great reason to think that the sap of all other
trees has such an alternate receding and progres-
sive motion, occasioned by the alternacies of day
and night, warm and cool, moist and dry. For
the sap in all vegetables does probably recede in
some measure from the tops of the branches, as
the sun leaves them; because its rarefying power
then ceasing, the greatly rarefied sap, and air
mixed with it, will condense, and take up less
room than they did, and the dew and rain will
then be strongly imbibed by the leaves; whereby
the body and branches of the vegetable which
have been much exhausted by the great evapora-
tion of the day, may at night imbibe sap and dew
from the leaves; for by several experiments, plants
were found to increase considerably in weight, in
dewy and moist nights. And by other experi-
ments on the vine, it was found that the trunks
and branches of vines were always in an imbibing
state, caused by the great perspiration of the
leaves, except in the bleeding season; but when at
night, that perspiring power ceases, then the con-
trary imbibing power will prevail and draw the sap
and dew from the leaves, as well as moisture from
the roots. And we have a further proof of this
by fixing mercurial gages to the stems of several
trees which do not bleed, whereby it is found,
that they are always in a strongly imbibing state,
by drawing up the mercury several inches;
whence it is easy to conceive how some of the
particles of the gilded bud in the inoculated jess-
amine may be absorbed by it, and thereby com-
municate the gilding miasma to the sap of other
branches; especially when, some months after the
inoculation, the stock of inoculated jessamine is
cut off a little above the bud; whereby the stock,
which was the counteracting part to the stem, be-
ing taken away, the stem attracts more vigorously
from the bud. The instance of the ilex grafted
upon the English oak, seems to afford a very con-
siderable argument against a circulation. For, if

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there were a free uniform circulation of the sap through the oak and ilex, why should the leaves of the oak fall in winter, and not those of the ilex. Another argument against an uniform circulation of the sap in trees, as in animals, may be drawn from an experiment where it was found by the three mercurial gages fixed to the same vine, that while some of its branches changed their state of protruding sap into a state of imbibing, others continued protruding sap; one 9, and the other 13 days longer." This reasoning of Dr Hales, is confirmed by an experiment made by Mr Mustel of the Academy of Sciences at Rouen, which we need not quote, but only observe that it is decisive against the doctrine of circulation.

(11.) PLANTS, COLOURS OF. See COLOUR, § VI.

(12.) PLANTS, DISSEMINATION OF. So great are the prolific powers of the vegetable kingdom, that a single plant almost of any kind, if left to itself, would in a short time over-run the whole. Indeed, supposing the plant to have been only a single annual with two seeds, it would, in 20 years, produce more than a million of its own species; what numbers then must have been produced by a plant whose seeds are so numerous as many of those with which we are acquainted? See NATURAL HISTORY, § 2. III. where the very prolific nature of plants, and the means by which they are carried to distant places, are noticed. This is a very curious matter of fact. If nature had appointed no means for the scattering of these numerous seeds, but allowed them to fall down in the place where they grew, the young vegetables must of necessity have choked one another as they grew up, and not a single plant could have arrived at perfection. But so many ways are appointed for the dissemination of plants, that we see they not only do not hinder each others growth, but a single plant will in a short time spread through different countries. The most evident means for this purpose are, 1. The force of the air.—That the efficacy of this may be the greater, nature has raised the seeds of vegetables upon stalks, so that the wind has thus an opportunity of acting upon them with the greater advantage. The seed-capsules also open at the apex, lest the ripe seeds should drop out without being widely dispersed by the wind. Others are furnished with wings, and a pappous down, by which, after they came to maturity, they are carried up into the air, and have been known to fly to the distance of 50 miles: 138 genera are found to have winged seeds. 2. In some plants the seed-vessels open with violence when the seeds are ripe, and thus throw them to a considerable distance; and there are 50 genera whose seeds are thus dispersed. 3. Other seeds are furnished with hooks, by which, when ripe, they adhere to the coats of animals, and are carried by them to their lodging places. Linnæus reckons 50 genera armed in this manner. 4. Many seeds are dispersed by birds and other animals; who pick up the berries, and afterwards eject the seeds uninjured. Thus the fox disseminates the privet, and man many species of fruit. The plants found growing upon walls and houses, on the tops of high rocks, &c. are mostly brought there by birds; and it is uni-

versally known, that by manuring a field with new dung, innumerable weeds will spring up which did not exist there before: 193 species are reckoned up which may be disseminated in this manner. 5. The growth of other seeds is promoted by animals in a different way. While some are eaten, others are scattered and trodden into the ground by them. The squirrels gnaw the cones of the pine, and many of the seeds fall out. When the loxia eats off their bark, and his only food, many of their seeds are committed to the earth, or mixed in the morsels with which where he had retired. The granularia, when it hides up her cuts, often forgets them, and the strike root. The same is observable of the walnut; mice collect and bury great quantities of them, and being afterwards killed by different animals, the nuts germinate. 6. We are attentive to find mosses, fungi, typhus, and mucor, grown everywhere; but it is for want of reflecting that their seeds are so minute that they are almost invisible to the naked eye. They float in the air like atoms, and are dropped everywhere, but grow only in those places where there was no vegetation before; and hence we find the same mosses in North America and in Europe. 7. Seeds are also dispersed by the ocean, and by rivers. "In Lapland (says Linnæus) we see the most evident proofs how far rivers contribute to deposit the seeds of plants. I have seen Alpine plants growing upon their shores frequently, 36 miles distant from the Alps; for their seeds falling into the rivers, and being carried along and left by the stream, take root there.—We may gather likewise from many circumstances, how much the sea furthers this business.—In Rostaga, the island of Græfca, Oeland, Gothland, and the shores of Scania, there are many foreign and German plants not yet naturalized in Sweden. The centaury is a German plant, whose seeds being carried by the wind into the sea, the waves landed this foreigner upon the coasts of Sweden. I was astonished to see the veronica maritima, a German plant growing at Tornea, which hitherto had been found only in Græfca; the sea was the vehicle by which this plant was transported thither from Germany; or possibly it was brought from Germany to Græfca, and from thence to Tornea. Many have imagined, but erroneously, that seed corrupts in water, and loses its principle of vegetation. Water at the bottom of the sea is seldom warm enough to destroy seeds; we have seen water cover the surface of a field for a whole winter, while the seed which it contained remained unhurt, unless at the beginning of spring, the waters were let down so low by drains, that the warmth of the sun-beams reached to the bottom. Then the seeds germinate, but presently become putrescent; so that for the rest of the year the earth remains naked and barren. Rain and showers carry seeds into the cracks of the earth, streams, and rivers; which last, conveying them to a distance from their native places, plant them in a foreign soil." 8. Lastly, some seeds assist their projection to a distance, in a very surprising manner. The crupina, a species of centaury, has its seeds covered over with erect bristles, by whose assistance it creeps and moves about in such a manner, that it

is by no means to be kept in the hand. If you confine one of them between the stocking and the foot, it creeps out either at the sleeve or neck-band, travelling over the whole body. If the bearded oat, after harvest, be left with other grain in the barn, it extricates itself from the glume; nor does it stop in its progress till it gets to the walls of the building. Hence, says Linnæus, the Dalecarlian, after he has cut and carried it into the barn in a few days finds all the glumes empty and the oats separate from them; for every oat has a spiral arista or beard annexed to it, which is contracted in wet, and extended in dry weather. When the spiral is contracted, it drags the oat along with it: the arista being bearded with minute hairs pointing downward, the grain necessarily follows it; but when it expands again, the oat does not go back to its former place, the roughness of the beard the contrary way preventing its return. If you take the seeds of equilium, or fern, these being laid upon paper, and viewed in a microscope, will be seen to leap over any obstacle as if they had feet; by which they are separated one from another; so that a person ignorant of this property, would pronounce these seeds to be so many ruits or small insects.

(13.) PLANTS, EXTRACTION OF COLOURS FROM. See COLOUR-MAKING, § 71—99.

(14.) PLANTS, FLOWERS OF. It is needless here to mention any thing of the texture, or of the vessels, &c. of flowers, as they are pretty similar to those of the leaf. For the characters and distinctions of flowers, See BOTANY, Index. There is one curious fact, however, which must be here noticed, viz. That every flower is perfectly formed in its parts many months before it appears outwardly; that is, the flowers which appear this year, are not properly speaking the flowers of this year, but of the last. For example, mezeorea generally flowers in January; but these flowers were completely formed in the month of August preceding. Of this fact any one may satisfy himself, by separating the coats of a tulip-root about the beginning of September; and he will find that the two innermost form a kind of cell, in the centre of which stands the young flower, which is not to make its appearance till the following April or May. Fig. 18. Pl. 276. exhibits a view of the tulip-root when dissected in Sept. with the young flower towards the bottom.

(15.) PLANTS, FOOD OF.—This will be found discussed under the article RURAL OECONOMY. The method of making OXYGEN GAS is now so much improved, that numberless experiments may be made with it both on animals and vegetables. It appears, indeed, that these two parts of the creation are a kind of counterbalance to one another: and the noxious parts or excrements of the one prove salutary food to the other. Thus, from the animal body continually pass off certain effluvia, which vitiate the air. Nothing can be more prejudicial to animal life than an accumulation of these effluvia: on the other hand, nothing is more favourable to vegetables than those excrementitious effluvia of animals; and accordingly they greedily absorb them from the earth or from the air. With respect to the excrementitious parts of living vegetables, the case is reversed.

The purest air is the common effluvia which passes off from vegetables; and this, however favourable to animal life, is by no means so to vegetable. See § 23.

(16.) PLANTS, FOSSIL. Many species of tender and herbaceous plants are found at this day, in great abundance, buried at considerable depths in the earth, and converted, as it were, into the nature of the matter they lie among; fossil wood is often found very little altered, and often impregnated with substances of almost all the different fossil kinds, and lodged in all the several strata, sometimes firmly imbedded in hard matter; sometimes loose: but this is by no means the case with the tenderer and more delicate subjects of the vegetable world. These are usually immersed either in a blackish slaty substance, found lying over the strata of coal, or else in loose nodules of ferruginous matter of a pebble-like form; and they are always altered into the nature of the substance they lie among: what we meet with of these, are principally of the fern kind: and what is very singular, though a very certain truth, is, that these are principally the ferns of American growth, not those of our own climate. The most frequent fossil plants are the polypody, spleenwort, osmund, trichomanes, and the several larger and smaller ferns; but besides these, there are also found pieces of the equisetum or horse-tail, and joints of the stellated plants, as the clivers, madder, and the like; and these have been too often mistaken for flowers; sometimes there are also found complete grasses, or parts of them, as also reeds, and other watery plants; sometimes the ears of corn, and not unfrequently the twigs or bark, and impressions of the bark, and fruit of the pine or fir kind, which have been, from their scaly appearance, mistaken for the skins of fishes; and sometimes, but that very rarely, we meet with mosses and sea-plants. Many of the ferns not unfrequently found, are of very singular kinds, and some species yet unknown to us; and the leaves of some appear set at regular distances, with round protuberances and cavities. The stones which contain these plants split readily, and are often found to contain, on one side, the impression of the plant, and on the other the prominent plant itself; and, beside all that have been mentioned, there have been frequently supposed to have been found with us ears of common wheat, and of the maize or Indian corn; the first being in reality no other than the common endmost branches of the fern, and the other the thicker boughs of various species of that and of the pine kind, with their leaves fallen off; such branches in such a state, cannot but afford many irregular tubercles and papillæ, and, in some species, such as are more regularly disposed. These are the kinds most obvious in England; and these are either immersed in the slaty stone which constitutes whole strata, or in flatted nodules, usually of about three inches broad, which readily split into two pieces on being struck. They are most common in Kent, in coal pits near Newcastle, and the forest of Dean in Gloucestershire; but are more or less found about almost all our coal-pits, and many of our iron mines. Though these seem the only species of plants found with us, yet

in Germany there are many others, and those found in different substances. A whitish stone, a little harder than chalk, frequently contains them: they are found also often in a grey flaty stone of a firmer texture, not unfrequently in a blackish one, and at times in many others. Nor are the bodies themselves less various here than the matter in which they are contained; the leaves of trees are found in great abundance, among which those of the willow, poplar, whitethorn, and pear trees, are the most common; small branches of box, leaves of the olive tree, and stalks of garden thyme, are also found there; and sometimes ears of the various species of corn, and the larger as well as the smaller mosses in great abundance. These seem the tender vegetables, or herbaceous plants, certainly found thus immersed in hard stone, and buried at great depths in the earth: others of many kinds there are also named by authors; but as in bodies so imperfect errors are easily fallen into, these seem all that can be ascertained beyond mere conjecture.

(17.) PLANTS, FRUITS OF. In describing the structure of fruits, a few examples shall be taken from such as are most generally known. A *pear*, besides the skin, which is a production of the skin of the bark, consists of a double parenchyma or pulp, sap, and air-vessels, calculary and acetary. The outer parenchyma is the same substance continued from the bark, only its bladders are larger and more succulent. It is everywhere interspersed with small globules or grains, and the bladders respect these grains as a kind of centres, every grain being the centre of a number of bladders. The sap and air-vessels in this pulp are extremely small. Next the core is the inner pulp or parenchyma, which consists of bladders of the same kind with the outer, only larger and more oblong, corresponding to those of the pulp, from which it seems to be derived. This inner pulp is much surer than the other, and has none of the small grains interspersed through it; and hence it has got the name of *acetary*. Between the acetary and outer pulp, the globules or grains begin to grow larger, and gradually unite into a hard stony body, especially towards the corculum or stool of the fruit; and from this circumstance it has been called the *calculary*. These grains are not derived from any of the organical parts of the tree; but seem rather to be a kind of concretions precipitated from the sap, similar to the precipitation from wine, urine, and other liquors. The core is a roundish cavity in the centre of the pear, lined with a hard woody membrane, in which the seed is inclosed. At the bottom of the core there is a small duct or canal, which runs up to the top of the pear; this canal allows the air to get into the core, for the purpose of drying and ripening the seeds. *Fig. 19. Pl. 276.* a transverse section of a pear, as is seen by the naked eye. A, the skin, and a ring of sap-vessels. B, the outer parenchyma, or pulp, with its vessels, and ligneous fibres interspersed. C, the inner parenchyma, or acetary, with its vessels, which are larger than the outer one. D, the core and seeds. *Fig. 20.* a piece cut off *fig. 19.* *Fig. 21.* is *fig. 20.* magnified. A A A, the small grains or globules, with the vessels radiated from them. *Fig. 22.* a longitudinal section

of the pear, showing a different view of the same parts with those of *fig. 19.* A the channel, or duct, which runs from the top of the pear to the bottom of the core. In a *lemon*, the parenchyma appears in three different forms. The parenchyma of the rind is of a coarse texture, being composed of thick fibres, woven into large bladders. Those nearest the surface contain the essential oil of the fruit, which bursts into a flame when the skin is squeezed over a candle. From this outmost parenchyma 9 or 10 insertions or lamellæ are produced, which run between as many portions of the pulp, and unite into one body in the centre of the fruit, which corresponds to the pith in trunks or roots. At the bottom and top of the lemon, this pith evidently joins with the rind, without the intervention of any lamellæ. This circumstance shows, that the pith and bark are actually connected in the trunk and roots of plants, though it is difficult to demonstrate the connection, on account of the closeness of their texture, and the minuteness of their fibres. Many vessels are dispersed through the whole of this parenchyma; but the largest ones stand on the inner edge of the rind, and the outer edge of the pith, just at the two extremities of each lamella. The 2d kind of parenchyma is placed between the rind and the pith; is divided into distinct bodies by the lamellæ; and each of these bodies forms a large bag. These bags contain a 3d parenchyma, which is a cluster of smaller bags, distinct and unconnected with each other, having a small stalk by which they are fixed to the large bag. Within each of these small bags are many hundreds of bladders, composed of extremely minute fibres. These bladders contain the acid juice of the lemon. *Fig. 12. Pl. 275.* a longitudinal section of a lemon. A A A, the rind with the vessels which contain the essential oil. B B, the substance corresponding to the pith, formed by the union of the lamellæ or insertions. C C, its continuation and connection with the rind, independent of the insertions. *Fig. 13.* a transverse section of the lemon. B B B, &c. the nine pulpy bags, or second parenchyma, placed between the rind and the pith; and the cluster of small bags, which contain the acid juice, inclosed in the large ones. C C, the large vessels that surround the pith. D D, two of the large bags laid open, showing the seeds, and their connection with the lamellæ or membranes which form the large bags.

(18.) PLANTS GROWING ON ANIMALS. See INSECTS, § 10.

(19.) PLANTS, LEAVES OF. The leaves of plants consist of the same substance with that of the trunk. They are full of nerves or woody portions, running in all directions, and branching out into innumerable small threads, interwoven with the parenchyma like fine lace or gauze. The skin of the leaf, like that of an animal, is full of pores, which both serve for perspiration and for the absorption of dews, air, &c. These pores or orifices differ both in shape and magnitude in different plants, which is the cause of that variety of texture or grain peculiar to every plant. The pulpy or parenchymatous part consists of very minute fibres, wound up into small cells or bladders. These cells are of various sizes in the same leaf.

leaf. All leaves, of whatever figure, have a marginal fibre, by which all the rest are bounded. The particular shape of this fibre determines the figure of a leaf. The vessels of leaves have the appearance of insensating; but, when examined by the microscope, they are found only to be interwoven or laid along each other. *Air-vessels*, or hose which carry no sap, are visible even to the naked eye in some leaves. When a leaf is slowly broke, they appear like small woolly fibres, connected to both ends of the broken piece. *Fig. 14. Pl. 175.* The appearance of the air-vessels to the eye, in a vine-leaf drawn gently asunder. *Fig. 15. A* small piece cut off that leaf. *Fig. 16.* The same piece magnified, in which the vessels have the appearance of a screw. *Fig. 17.* The appearance of these vessels as they exist in the leaf before they are stretched out.

(20.) **PLANTS, METHOD OF DRYING AND PRESERVING, FOR BOTANICAL PURPOSES.** Many methods have been devised for the preservation of plants: we shall relate only those that have been found most successful. First prepare a press, which a workman will make by the following directions. Take two planks of a wood not liable to warp. The planks must be two inches thick, 18 inches long, and 12 inches broad. Get 4 male and 4 female screws, such as are used for securing sash-windows. Let the 4 female screws be let into the four corners of one of the planks, and corresponding holes made through the four corners of the other plank for the male screws to pass through, so as to allow the two planks to be screwed tightly together. It will not be amiss to face the bearing of the male screws upon the wood with iron plates; and if the iron plates went across from corner to corner of the wood, it would be a good security against the warping. *adly.* Get half a dozen quires of large soft spongy paper, (such as the stationers call *blossom blotting paper* is the best,) and a few sheets of strong pasteboard. The plants you wish to preserve should be gathered in a dry day, after the sun hath exhale the dew; taking particular care to collect them in that state wherein their generic and specific characters are most conspicuous. Carry them home in a tin box 9 inches long, 4½ inches wide, and 1½ deep. Get the box made of the thinnest tinned iron that can be procured; and let the lid open upon hinges. If any thing happens to prevent the immediate use of the specimens you have collected, they will be kept fresh two or three days in this box much better than by putting them in water. To preserve them, let them lie upon a table until they become limber; and then lay them upon a pasteboard, as much as possible in their natural form, but at the same time with a particular view to their generic and specific characters. For this purpose it will be advisable to separate one of the flowers, and to display the generic character. If the specific character depends upon the flower or upon the root, a particular display of that will be likewise necessary. When the plant is thus disposed upon the pasteboard, cover it with 8 or 10 layers of spongy paper, and put into the press. Exert only a small degree of pressure for the first two or three days; then examine it, unfold any unnatural plaits, rectify any mistakes, and, after

putting fresh paper over it, screw the press harder. In about three days more separate the plant from the pasteboard, if it is sufficiently firm to allow of a change of place; put it upon a fresh pasteboard; and, covering it with a fresh blossom paper, let it remain in the press a few days longer. The press should stand in the sun-shine, or within the influence of a fire. When it is perfectly dry, the usual method is to fasten it down, with paste or gum-water, on the right hand inner page of a sheet of large strong writing paper. It requires some dexterity to glue the plant nearly down, so that none of the gum or paste may appear to defile the paper. Press it gently again for a day or two, with a half sheet of blossom paper betwixt the folds of the writing paper. When it is quite dry, write upon the left hand inner page of the paper, the name of the plant; the specific character; the place where, and the time when, it was found; and any other remarks you may think proper. Upon the back of the same page, near the fold of the paper, write the name of the plant, and then place it in your cabinet. A small quantity of finely powdered arsenic, or corrosive sublimate, is mixed with the paste or gum water, to prevent the devastations of insects; but the seeds of staves are finely powdered will answer the same purpose, without being liable to corrode or to change the colour of the more delicate plants. Some people put the dried plants into the sheets of writing paper, without fastening them down at all; and others only fasten them by means of small slips of paper, pasted across the stem or branches. Where the species of any genus are numerous, and the specimens are small, several of them may be put into one sheet of paper.—2. A more expeditious method is to take the plants out of the press after the first or second day; let them remain upon the pasteboard; cover them with five or six leaves of blossom paper, and iron them with a hot smoothing iron until they are perfectly dry. If the iron is too hot, it will change the colours; but some people, taught by long practice, will succeed very happily. This is the best method to treat the orchis and other slimy mucilaginous plants. 3. Another method is to take the plants when fresh gathered, and, instead of putting them into the press, immediately to fasten them down to the paper with strong gum water: then dip a camel-hair pencil into spirit-varnish, and varnish the whole surface of the plant two or three times over. This method succeeds very well with plants that are readily laid flat, and it preserves their colours better than any other. The spirit varnish is made thus: To a quart of highly rectified spirit of wine put five ounces of gum sandarac; two ounces of mastic in drops; one ounce of pale gum elemi, and one ounce of oil of spike-lavender. Let it stand in a warm place, and shake it frequently to expedite the solution of the gums. The specimens may be disposed systematically in a large folio book; but a vegetable cabinet is upon all accounts more eligible. In *Pl. CCLXXVII.* there is a section of a cabinet, in the true proportions it ought to be made, for containing a complete collection of British plants. By the assistance of this drawing, and the adjoining scale, a workman will readily make one. The drawers

drawers must have backs and sides, but no other front than a small ledge. Each drawer will be 14 inches wide, and 10 inches from the back to the front, after allowing half an inch for the thickness of the two sides, and a quarter of an inch for the thickness of the back. The sides of the drawers, in the part next the front, must be sloped off in a serpentine line, something like what the workmen call an *agee*. The bottoms of the drawers must be made to slide in grooves cut in the uprights, so that no space may be lost betwixt drawer and drawer. After allowing a quarter of an inch for the thickness of the bottom of each drawer, the clear perpendicular space in each must be as in the following table:

- I. Two tenths of an inch.
- II. One inch and two tenths.
- III. Four inches and six tenths.
- IV. Two inches and three tenths.
- V. Seven inches and eight tenths.
- VI. Two inches and two tenths.
- VII. Two tenths of an inch.
- VIII. One inch and four tenths.
- IX. Two tenths of an inch.
- X. Two inches and eight tenths.
- XI. One inch and two tenths.
- XII. Three inches and five tenths.
- XIII. Two inches and four tenths.
- XIV. Three inches and eight tenths.
- XV. Three inches and four tenths.
- XVI. One inch and three tenths.
- XVII. Two inches and eight tenths.
- XVIII. Six tenths of an inch.
- XIX. Ten inches.
- XX. One inch and nine tenths.
- XXI. Four inches and four tenths.
- XXII. Two inches and six tenths.
- XXIII. One inch and two tenths.
- XXIV. Seventeen inches.

This cabinet shuts up with two doors in front; and the whole may stand upon a base, containing a few drawers for the reception of duplicates and papers.

(21.) PLANTS, METHOD OF PRESERVING, IN THEIR ORIGINAL SHAPE AND COLOUR. Wash a sufficient quantity of fine sand, so as perfectly to separate it from all other substances; dry it; pass it through a sieve to clear it from any gross particles which would not rise in the washing: take an earthen vessel of a proper size and form, for every plant and flower which you intend to preserve; gather your plants and flowers when they are in a state of perfection, and in dry weather, and always with a convenient portion of the stalk; heat a little of the dry sand prepared as above, and lay it in the bottom of the vessel, so as equally to cover it; lay the plant or flower upon it, so as that no part of it may touch the sides of the vessel: sit or shake in more of the same sand by little upon it, so that the leaves may be extended by degrees, and without injury, till the plant or flower is covered about two inches thick: put the vessel into a stove, or hot-house, heated by little and little to the 50th degree; let it stand there a day or two, or perhaps more, according to the thickness and succulence of the flower or plant; then gently shake the sand out upon a sheet of paper, and take out the plant, which you will find in all its beauty, the

shape as elegant, and the colour as vivid as when it grew. Some flowers require certain little operations to preserve the adherence of their petals, particularly the tulip; with respect to which it is necessary, before it is buried in the sand, to cut the triangular fruit which rises in the middle of the flower; for the petals will then remain more firmly attached to the stalk. A *HORTUS SICCUS* prepared in this manner would be one of the most beautiful and useful curiosities imaginable.

(22.) PLANTS, MOTION OF. See *HEDYSARUM*, N^o 2; and *MOTION*, § 10.

(23.) PLANTS, NUTRITION OF. Various opinions have been entertained by modern chemists on this subject. M. Haffenratz considers carbon as the substance, which chiefly nourishes vegetables. M. Ingenhousz, in his work on this subject, endeavours to prove, that, if carbon has any influence, it can only be in the state of carbonic acid, as that acid is absorbed and decomposed by vegetables, while the natural ligneous carbon produces no effect on the expansion of plants. Mr A. Young has endeavoured to demonstrate this by experiments. Prof. Rafn of Copenhagen, made a series of experiments for 3 years, from which he concludes, that carbon has a decided influence in the nourishment of plants; that the carbonic acid produces exactly the same effect as charcoal of wood; and that coal ashes, which both English and German farmers celebrate so much, destroy the plants, if the soil contains one 8th of this mixture. No seed germinates in oil. A single grain of common salt in 200 grains of water is sufficient to retard vegetation, and may even kill the plants, if watered with it. Shavings of horn and charcoal are favourable to vegetation.

(24.) PLANTS, PERCEPTION OF. Dr Bell of Edinburgh, and many other ingenious men, believe that plants have a power of perception. In the 2d vol. of the *Manchester Transactions*, we find some speculations on the perceptive power of vegetables, by Dr Percival, who attempts to show, by the several analogies of organization, life, instinct, spontaneity, and self-motion, that plants, like animals, are endued with the powers both of perception and enjoyment. The attempt is ingenious, and is ingeniously supported, but in our opinion fails to convince. That there is an analogy between animals and vegetables is certain; but we cannot from thence conclude that they either perceive or enjoy. Botanists have, it is true, derived from *anatomy* and *physiology* almost all the terms employed in the description of plants. But we cannot from thence conclude that their organization, though it bears an analogy to that of animals, is the sign of a *living principle*, if to this principle we annex the idea of *perception*; yet so fully is our author convinced of the truth of it, that he does not think it extravagant to suppose, that, in some future period, perceptivity may be discovered to extend even beyond the limits now assigned to vegetable life. Corallines, madrepores, millepores, and sponges, were formerly considered as fossil bodies: but the experiments of Count Marignol evinced, that they are endowed with life, and led him to class them with the maritime plants. And the observations of Ellis, Jussieu, and Peysonel, have since raised them to the rank of animals.

The

The detection of error in long established opinions, concerning one branch of natural knowledge, justifies the suspicion of its existence in others which are nearly allied to it. He then goes on to draw a comparison between the instincts of animals and those of vegetables: the calf, as soon as it comes into the world, applies to the teats of the cow; and the duckling, though hatched under a hen, runs to the water. "Instincts analogous to these (says our author) operate with equal energy on the vegetable tribe. A seed contains a germ, or plant in miniature, and a radicle, or little root, intended by nature to supply it with nourishment. If the seed be sown in an inverted position, still each part pursues its proper direction. The plumula turns upward, and the radicle strikes downward into the ground." But these and all the other ingenious arguments drawn by the Doctor from the sun-flower, the *DIONÆA MUSCIPULA*, &c. however plausible, are by no means convincing, and there certainly must ever remain a distinct and eternal barrier between the perceptions of animals and the motions of vegetables; although even the great Dr Watson, Bp. of Landaff, has espoused the same side of the question with Dr Percival. See *MOTION*, § 10.

(25.) **PLANTS, PERPENDICULARITY OF.**—This is a curious phenomenon in natural history, which was first observed by Mr Dodart, and published in an essay on the affection of perpendicularity observed in the stems or stalks of all plants, in the roots of many, and even in their branches, as much as possible. Though almost all plants rise a little crooked, yet the stems shoot up perpendicularly, and the roots sink down perpendicularly: even those, which by the declivity of the soil come out inclined, or those which are diverted out of the perpendicular by any violent means, again redress and straighten themselves, and recover their perpendicularity, by making a second and contrary bend or elbow, without rectifying the first. We commonly look upon this affection without any surprise; but the naturalist, who knows what a plant is, and how it is formed, finds it a subject of astonishment. Each seed we know contains in it a little plant, already formed, and needing nothing but to be unfolded; the little plant has its root; and the pulp, which is usually separated into two lobes, is the foundation of the first food it draws by its root when it begins to germinate. If a seed in the earth, therefore, be disposed so as that the root of the little plant be turned downwards, and the stem upwards, and even perpendicularly upwards, it is easy to conceive that the little plant coming to unfold itself, its stalk and root need only follow the direction they have to grow perpendicularly. But we know that the seeds of plants, whether sown of themselves or by man, fall in the ground at random; and among the great variety of situations with regard to the talk of their plant, the perpendicular one upwards is but one. In all the rest, therefore, it is necessary that the stalk rectify itself, so as to get out of the ground; but what force affects this change, which is unquestionably a violent action? To account for two such different actions, M. Dodart supposes that the fibres of the stalks are of such a nature as to be contracted and shortened

by the heat of the sun, and lengthened out by the moisture of the earth; and, on the contrary, that the fibres of the roots are contracted by the moisture of the earth, and lengthened by the heat of the sun. When the plantule therefore is inverted, and the root at the top, the fibres which compose one of the branches of the root are not alike exposed to the moisture of the earth, the lower part being more exposed than the upper. The lower must of course contract the most; and this contraction is again promoted by the lengthening of the upper, whereon the sun acts with the greatest force. This branch of the root must therefore recoil towards the earth, and, insinuating through the pores thereof, must get underneath the bulb, &c. By inverting this reasoning we discover how the stalk comes to get uppermost. We suppose then that the earth attracts the root to itself, and that the sun contributes to its descent; and, on the other hand, that the sun attracts the stem, and the earth contributes to send it towards the same. With respect to the straightening of the stalks in the open air, our author imagines that it arises from the impression of the sun and rain. For the upper part of the stalk that is bent, is more exposed to the rain, dew, and even the sun, &c. than the under; and these causes, in a certain structure of the fibres, both equally tend to straighten the part most exposed by the shortening they successively occasion in it; for moisture shortens by swelling, and heat by dissipating. What that structure is which gives the fibres such different qualities, or whereon it depends, is a mystery as yet beyond our depth. M. de la Hire accounts for the perpendicularity of the stems or stalks of plants, by supposing that the roots of plants draw a coarser and heavier juice, and the stem and branches a finer and more volatile one: but this appears to be one of those conjectural hypotheses, of which no evidence can be adduced, like the doctrines of æthers, atmospheres, &c. (See *OPTICS*, § 153-156.) M. Astruc accounts for the perpendicularity of the stems, and their redressing themselves, thus: 1. He thinks the nutritious juice arises from the circumference of the plant, and terminates in the pith: And, 2. That fluids contained in tubes, either parallel or oblique to the horizon, gravitate on the lower part of the tubes, and not at all on the upper. Hence it follows, that, in a plant placed either obliquely or parallel to the horizon, the nutritious juice will act more on the lower part of the canals than on the upper; and thus they will insinuate more into the canals communicating therewith, and be collected more copiously therein: thus the parts on the lower side will receive more accretion and be more nourished than those on the upper; the extremity of the plant will therefore be obliged to bend upwards. This principle brings the seed into its due situation at first. In a bean planted upside down, the plume and radicle may be seen with the naked eye, shooting at first directly for about an inch; after which they begin to bend, the one downward, and the other upward. The same is the case in a heap of barley to be made into malt, or in a quantity of acorns laid to sprout in a moist place, &c. Each grain of barley, and each acorn, has a different situation; and yet every sprout tends directly upward,

ward, and every root downward, and the curvity or bend they make, is greater or less as their situation approaches more or less to the direction wherein no curvature at all would be necessary. But two such opposite motions cannot possibly arise without supposing some difference between the two parts: the only one we know of is, that the plume is fed by a juice imported to it by tubes parallel to its sides, whereas the radical imbibes its nourishment at every pore in its surface. When the plume, therefore, is either parallel or inclined to the horizon, the nutritious juice, feeding the lower parts more than the upper, will determine its extremes to turn upward, for the reasons before given. On the contrary, when the radicle is in the like situation, the nutritious juice penetrating through the upper part more copiously than through the under, there will be a greater accretion of the former than of the latter; and the radicle will therefore be bent downwards, and this mutual curvity of the plume and radical must continue till such time as their sides are nourished alike, which cannot be till they are perpendicular.

(26.) PLANTS, PERSPIRATION OF, AND QUANTITY OF MOISTURE IMBIBED BY. These curious particulars have been determined with great accuracy by Dr. Hales. The method he took to accomplish his purpose was as follows.—In July, the warmest season of the year, he took a large sun-flower $3\frac{1}{2}$ feet high, which had been purposely planted in a flower-pot when young. He covered the pot with thin milled lead, leaving only a small hole to preserve a communication with the external air, and another by which he might occasionally supply the plant with water. Into the former he inserted a glass tube nine inches long, and another shorter tube into the hole by which he poured in the water; and the latter was kept close stopped with a cork, except when there was occasion to use it. The holes in the bottom of the pot were also stopped up with corks, and all the crevices shut with cement.—Things being thus prepared, the pot and plant were weighed for 15 several days; after which the plant was cut off close to the leaden plate, and the stump well covered with cement. By weighing, he found that there perspired through the unglazed porous pot, two ounces every 12 hours; which being allowed for in the daily weighing of the plant and pot, the greatest perspiration, in a warm day, was found to be one pound 14 ounces; the middle rate of perspiration, one pound four ounces; the perspiration of a dry warm night, without any sensible dew, was about three ounces; but when there was any sensible, though small dew, the perspiration was nothing; and where there was a large dew, or some little rain in the night, the plant and pot was increased in weight 2 or 3 ounces. To know what quantity was perspired from a square inch of surface, our author cut off all the leaves of the plant, and laid them in five several parcels, according to their several sizes; and then measured the surface of a leaf of each parcel, by laying over it a large lattice made with threads, in which each of the little squares were $\frac{1}{4}$ of an inch; by numbering of which, he had the surface of the leaves in square inches; which, multiplied by the number of leaves in the corresponding parcels, gave

the area of all the leaves. By this method he found the surface of the whole plant above ground to be 5616 square inches, or 39 square feet. He dug up another sun-flower of nearly the same size, which had eight main roots, reaching 15 inches deep and sideways, from the stem. It had besides a very thick bush of lateral roots from the 8 main roots, extending every way in a hemisphere about 9 inches from the stem and main roots. In order to estimate the length of all the roots, he took one of the main roots with its laterals, and measured and weighed them; and then weighed the other 7 with their laterals; by which means he found the sum of all their lengths to be 1448 feet. Supposing then the periphery of these roots at a medium to be 0.31 of an inch, then their surface will be 2276 square inches, or 15.8 square feet; that is, equal to 0.4 of the surface of the plant above ground. From calculations drawn from these observations, it appears, that a square inch of the upper surface of this plant perspires one 165th part of an inch in a day and a night; and that a square inch of the surface under ground imbibed one 67th of an inch in the same time. The quantity perspired by different plants, however, is by no means equal. A vine-leaf perspires only one 191st of an inch in 12 hours; a cabbage perspires one 80th of an inch in the same time; an apple tree one 103d in 12 hours; and a lemon one 248th in 12 hours.

(27.) PLANTS, ROOTS OF. In examining the roots of plants, the first thing is the skin, which is of various colours in different plants. Every root, after it has arrived at a certain age, has a double skin. The first is coeval with the other parts, and exists in the feed: but afterwards there is a ring set off from the bark, which forms a second skin; e. g. in the root of the dandelion, towards the end of May, the original or outer skin appears shrivelled, and is easily separated from the new one, which is fresher, and adheres more firmly to the bark. Perennial plants are supplied in this manner with a new skin every year; the outer one always falls off in autumn and winter, and a new one is formed from the bark in the succeeding spring. The skin has numerous cells or vessels, and is a continuation of the parenchymatous part of the radicle. However, it does not consist solely of parenchyma; for the microscope shows that there are many tubular ligneous vessels interspersed through it. When the skin is removed, the true cortical substance or bark appears, which is also a continuation of the parenchymatous part of the radicle, but greatly augmented. The bark is of very different sizes. In most trees it is exceeding thin in proportion to the wood and pith. On the other hand, in carrots, it is almost one half of the semidiameter of the root; and, in dandelion, it is nearly twice as thick as the woody part. The bark is composed of two substances; the parenchyma or pulp, which is the principal part, and a few woody fibres. The parenchyma is exceedingly porous, and has a great resemblance to a sponge; for it swells considerably when dried, and dilates to its former dimensions when infused in water. These pores are not pervious, so as to communicate with each other; but consist of distinct little cells or bladders, scarcely visible

ble without the microscope. In all roots, these cells are constantly filled with a thin watery liquor. They are generally of a spherical figure; though in some roots, as the bugloss and dandelion, they are oblong. In many roots, as the horse radish, onion, asparagus, potatoe, &c. the parenchyma is of one uniform structure. But in others it is more diversified, and puts on the shape of rays, issuing from the centre towards the circumference of the bark. These rays sometimes run quite through the bark, as in lovage; and sometimes advance towards the middle of it, as in melilot and most of the leguminous and umbelliferous plants. These rays generally stand at an equal distance from each other in the same plant; but the distance varies greatly in different plants. Neither are they of equal sizes: in carrot they are exceedingly small, and scarcely discernible; in melilot and chervil, they are thicker. They are likewise more numerous in some plants than in others. Sometimes they are of the same thickness from one edge of the bark to the other; and some grow wider as they approach towards the skin. The vessels with which these rays are amply furnished, are supposed to be air-vessels, because they are always found dry, and not so transparent as the vessels which contain the sap. In all roots here are ligneous vessels dispersed in different proportions through the parenchyma of the bark. These ligneous vessels run longitudinally through the bark in the form of small threads, which are tubular, as is evident from the rising of the sap in them when a root is cut transversely. These ligneous sap-vessels do not run in direct lines through the bark, but at small distances incline towards one another, in such a manner that they appear to the naked eye to be inoculated; but the microscope discovers them to be only contiguous, and braced together by the parenchyma. These tracheae or coarctations are very various both in size and number in different roots; but in all plants they are most numerous towards the inner edge of the bark. Neither are these vessels single tubes; but, like the nerves in animals, are bundles of 20 or 30 small contiguous cylindrical tubes, which uniformly run from the extremity of the root without sending off any branches or suffering any change in their size or shape. In some roots, as parsnep, especially in the ring next the inner extremity of the bark, these vessels contain a kind of lymph, which is sweeter than the sap contained in the bladders of the parenchyma. From this circumstance they have got the name of *lymph-duets*. These lymph-duets sometimes yield a mucilaginous lymph, as in the comphrey; and sometimes a white milky glutinous lymph, as in the angelica, fenchus, burdock, scorzonera, dandelion, &c. The lymph-duets are supposed to be the vessels from which the gums and balsams are excreted. The lymph of fennel, when exposed to the air, turns into a clear transparent balsam; and that of the scorzonera, dandelion, &c. condenses into a gum. The situation of the vessels is various. In some plants they stand in a ring or circle at the inner edge of the bark, as in asparagus; in others, they appear in lines or rays, as in borage; in the parsnep, and several other plants, they are most conspicuous towards the outer edge of the

bark; and in the dandelion, they are disposed in the form of concentric circles. The wood of roots is that part which appears after the bark is taken off, and is firmer and less porous than the bark or pith. It consists of two distinct substances, viz. the pulpy or parenchymatous, and the ligneous. The wood is connected to the bark by large portions of the bark inserted into it. These insertions are mostly in the form of rays, tending to the centre of the pith, which are easily discernible by the eye in a transverse section of most roots. These insertions, like the bark, consist of many vessels, mostly of a round or oval figure. The ligneous vessels are generally disposed in collateral rows running longitudinally through the root. Some of these contain air, and others sap. The *air-vessels* are so called, because they contain no liquor. These air-vessels are distinguished by being whiter than the others. The pith is the central part of the root. Some roots have no pith, as the stramonium, nicotiana, &c.; others have little or none at the extremities of the roots, but have a considerable quantity of it near the top. The pith, like every other part of a plant, is derived from the seed; but in some, it is more immediately derived from the bark: for the insertions of the bark running in betwixt the rays of the wood, meet in the centre, and constitute the pith. Roots, which have no pith in their lower parts, are amply provided with it towards the top, as in columbine, lovage, &c. The bladders of the pith are of different sizes, and generally of a circular figure. Their position is more uniform than in the bark. Their sides are not mere films, but a composition of small fibres or threads; which gives the pith, when viewed with a microscope, the appearance of a piece of fine gauze or network. In a word, the whole substance of roots, is nothing but a congeries of tubes and fibres, adapted for the absorption of nourishment, and of course the extension and augmentation of their parts.

Fig. 8. *Pl. CCLXXV.* A transverse section of the root of wormwood as it appears to the naked eye.

Fig. 9. A section of fig. 8. magnified. AA the skin, with its vessels. BBBB, the bark. The round holes CCC, &c. are the lymph-duets of the bark; All the other holes are little cells and sap-vessels. DDD, parenchymatous insertions from the bark, with the cells, &c. EEEE, the rays of the wood, in which the holes are the air-vessels. N. B. This root has no pith.

(28.) PLANTS, SEA. See SEA PLANTS.

(29.) PLANTS, SEEDS OF, are of various figures and sizes. Most of them are divided into two lobes; though some, as those of the cress kind, have six; and others, as the grains of corn, are entire. But as the essential properties of all seeds are the same, when considered with regard to the principles of vegetation, we need only describe one seed, viz. the great garden bean. We prefer it to all others, because, after it begins to vegetate, its parts are more conspicuous than many others, and consequently better calculated for investigation. It is covered with two coats or membranes. The outer coat is extremely thin, and full of pores; but may be easily separated from the inner one (which is much thicker), after the bean has been boiled, or lain a few days in the

K k k k

soil;

soil. At the thick end of the bean there is a small hole visible to the naked eye, immediately over the radicle or future root, that it may have a free passage into the soil (*fig. 1. A. Plate CCLXXV.*) When these coats are taken off, the body of the seed appears, which is divided into two smooth portions or lobes. The smoothness of the lobes is owing to a thin film or cuticle with which they are covered. At the basis of the bean is placed the radicle or future root (*fig. 3. A.*) The trunk of the radicle, just as it enters into the body of the seed, divides into two capital branches, one of which is inserted into each lobe, and sends off smaller ones in all directions through the whole substance of the lobes (*fig. 4. AA. Pl. CCLXXV*) These ramifications become so extremely minute towards the edges of the lobes, that they require the finest glasses to render them visible. To these ramifications Grew and Malpighi have given the name of *feminal root*; because, by means of it, the radicle and plume, before they are expanded, derive their principle nourishment. The plume, bud, or germ (*fig. 3.*) is inclosed in two small corresponding cavities in each lobe. Its colour and consistence is much the same with those of the radicle, of which it is only a continuation, but having a quite contrary direction; for the radicle descends into the earth, and divides into a great number of smaller branches or filaments; but the plume ascends into the open air, and unfolds itself into all the beautiful variety of stem, branches, leaves, flowers, fruit, &c. The plume in corn shoots from the smaller end of the grain, and among malsters is named *ACROSPIRE*. The substance, or parenchymatous part of the lobes, is not a mere concentered juice, but is curiously organized, and consists of a vast number of small bladders resembling those in the pith of trees (*fig. 4.*) Besides the coats, cuticle, and parenchymatous parts, there is a substance perfectly distinct from these, distributed in different proportions through the radicle, plume, and lobes. This inner substance appears very plainly in a transverse section of the radicle or plume. Towards the extremity of the radicle, it is one entire trunk; but higher up it divides into three branches; the middle one runs directly up to the plume, and the other two pass into the lobes on each side, and spread out into a great variety of small branches through the whole body of the lobes, (*fig. 4.*) This substance is very properly termed the *feminal root*: for when the seed is sown, the moisture is first absorbed by the outer coats, which are everywhere furnished with sap and air vessels; from these it is conveyed to the cuticle; from the cuticle it proceeds to the pulpy part of the lobes; when it has got thus far, it is taken up by the mouths of the small branches of the feminal root, and passes from one branch into another, till it is all collected into the main trunk, which communicates both with the plume and radicle, the two principle involved organs of the future plant. After this the sap or vegetable food runs in two opposite directions: part of it ascends into the plumes, and promotes the growth and expansion of that organ; and part of it descends into the radicle, for nourishing and evolving the root and its various filaments. Thus the plume and radi-

cle continue their progress in opposite directions till the plant arrives at maturity. Every plant is possessed of two roots, both of which are contained in the seed. The plume and radicle, when the seed is first deposited in the earth, derive their nourishment from the feminal root; but, afterwards, when the radicle begins to shoot out its filaments, and to absorb some moisture, not, however, in a sufficient quantity to supply the exigencies of the plume, the two lobes, or main body of the seed, rise along with the plume, assume the appearance of two leaves, resembling the lobes of the seed in size and shape, but having no resemblance to those of the plume, for which reason they are named *dissimilar leaves*. These defend the young plume from the weather, and by absorbing dew, air, &c. assist the tender radicle in nourishing the plume, with which they have still a connection by the feminal root. But when the radicle or 2d root has descended deep enough into the earth, and has acquired a sufficient number of filaments or branches for absorbing as much aliment as is proper for the growth of the plume; then the feminal or dissimilar leaves, their utility being entirely superseded, begin to decay and fall off. *Fig. 1. A.* the foramen or hole in the bean through which the radicle shoots into the soil. *Fig. 2. A* a transverse section of the bean, the dots being the branches of the feminal root. *Fig. 3. A.* the radicle. *B.* the plume or bud. *Fig. 4. A.* a longitudinal section of one of the lobes of the bean a little magnified, to show the small bladders of which the pulpy or parenchymatous part is composed. *Figs. 5. 6. A.* a transverse section of the radicle; *B.* a transverse section of the plume, showing the organs or vessels of the feminal root. *Fig. 4.* A view of the feminal root branched out upon the lobes. *Fig. 7.* The appearance of the radicle, plume, and feminal root, when a little farther advanced in growth.

(30.) **PLANTS, SEXES OF.** The establishment of the sexual system in vegetables, and the analogy between vegetable and animal bodies, has suggested a method of improving plants, as animals are, by *crossing the breed*. In the *Philos. Transf.* for 1799, there is an account of some very curious experiments on this subject made by Andrew Knight, Esq. For the particulars of these experiments we shall refer to that work, and shall here only mention the result of one or two upon different species or varieties of pease and apples. By introducing the farina of the largest and most luxuriant species of pea into the blossoms of the most diminutive, and by reversing this process, he found that the powers of the male and female, in their effects on the offspring, were exactly equal. The vigour of the growth, the size of the seeds produced; and the season of maturity were the same, though the one was a very early, and the other a very late variety. He had also in this experiment a striking instance of the stimulative effects of crossing the breeds; for the smallest variety whose height rarely exceeds a foot, was increased to 6 feet, while the height of the large and luxuriant kind was very little diminished. Hence it is evident, that by this process a great number of new varieties may be obtained. The success on Mr Knight's experiments on the apple has

was also been fully equal to his hopes. The plants which he obtained from his efforts to unite the good qualities of two different kinds of apples, possess the greatest health and luxuriance of growth, as well as the best properties in other respects. See BOTANY, *Index*.

(31.) PLANTS, SLEEP OF. See PHYSIOLOGY, &c. XIII.

(32.) PLANTS, TRUNK, STALK, OR STEM OF. Whatever is said with regard to the trunks of plants, applies equally to the branches. The trunk, like the root, consists of three parts, viz. the bark, wood, and pith. These parts, though substantially the same in the trunk as in the root, are in many cases very different in their texture and appearance. The skin of the bark is composed of very minute bladders, interspersed with longitudinal woody fibres, as in the nettle, thistle, and most herbs. The outside of the skin is visibly porous in some plants, particularly the cane. The principal body of the bark is composed of pulp or parenchyma, and innumerable vessels much larger than those of the skin. The texture of the pulpy part, though the same substance with the parenchyma in roots, yet seldom appears in the form of rays running towards the pith; and when these rays do appear, they do not extend above half way to the circumference. The vessels of the bark are very differently situated, and defined for various purposes in different plants. For example, in the bark of the pine, the inmost are lymph-ducts, and exceedingly small; the outmost are gum or resiniferous vessels, destined for the secretion of turpentine; and are so large as to be distinctly visible to the naked eye. The wood lies between the bark and pith, and consists of two parts, viz. a parenchymatous and ligneous. In all trees, the parenchymatous part of the wood, though much diversified as to size and consistence, is uniformly disposed in diametrical rays, or insertions running betwixt similar rays of the ligneous part. The true wood is nothing but a congeries of old dried lymph-ducts. Between the bark and the wood a new ring of these ducts is formed every year, which gradually loses its softness as the cold season approaches, and towards the middle of winter is condensed into a solid ring of wood. These annual rings, which are distinctly visible in most trees when cut through, serve as natural marks to distinguish their age (fig. 10, 11.) The rings of one year are sometimes larger sometimes less than those of another, probably owing to the favourableness or unfavourableness of the season. The pith, though of a different texture, is exactly of the same substance with the parenchyma of the bark and the insertions of the wood. The quantity of pith is various in different plants. Instead of being increased every year like the wood, it is annually diminished, its vessels drying up, and assuming the appearance and structure of wood; inasmuch, that in old trees there is scarce such a thing as pith to be discerned. A ring of sap-vessels are usually placed at the outer edge of the pith, next the wood. In the pine, fig, and walnut, they are very large. The parenchyma of the pith is composed of small cells or bladders, of the same kind with

those of the bark, only of a larger size. The general figure of these bladders is circular; though in some plants, as the thistle and borage, they are angular. Though the pith is originally one connected chain of bladders, yet as the plant grows old they shrivel, and open in different directions. In the walnut, after a certain age, it appears in the form of a regular transverse hollow division. In some plants it is altogether wanting; in others, as the sonchus, nettle, &c. there is only a transverse partition of it at every joint. Fig. 10. A transverse section of a branch of ash, as it appears to the eye. Fig. 11. The same section magnified. AA, the bark. BBB, an arched ring of sap-vessels next the skin. CCC, the parenchyma of the bark with its cells, and another arched ring of sap-vessels. DD, a circular line of lymph-ducts immediately below the above arched ring. EE, the wood. F, the first year's growth. G, the second. H, the third year's growth. III, the true wood. KK, the great air-vessels. LL, the lesser ones. MMM, the parenchymatous insertions of the bark, represented by the white rays. NO, the pith, with its bladders or cells.

(1.) * To PLANT. *v. a.* [*planto*, Lat. *planter*, Fr.] 1. To put into the ground in order to grow; to set; to cultivate.—*Plant* not thee a grove of any trees near unto the altar of the Lord. *Deut.* xvi. 21. 2. To procreate; to generate.—

The honoured gods the chairs of justice
Supply with worthy men, *plant* love amongst
you. *Shak.*

It engenders choler, *planteth* anger. *Shak.*

3. To place; to fix.—
The fool hath *planted* in his memory
An army of good words. *Shak.*

I will advise you where to *plant* yourselves. *Shak.*

The mind through all her powers
Irradiate, there *plant* eyes. *Milton.*

Turnus had assembled all his powers,
His standard *planted* on Laurentum's towers. *Dryden.*

4. To settle; to establish; as to *plant* a colony.
Create, and therein *plant* a generation. *Milton.*

—To the *planting* of it in a nation, the soil may be mellowed with the blood of the inhabitants; nay, the old extirpated, and the new colonies *planted*. *Decay of Piety.* 5. To fill or adorn with something planted; as, he *planted* the garden or the country. 6. To direct properly; as, to *plant* a cannon.

(2.) * To PLANT. *v. n.* To perform the act of *planting*.—

To build, to *plant*, whatever you intend,
In all let nature never be forgot. *Pope.*

—If you *plant* where savages are, do not only entertain them with trifles and jingles, but use them justly. *Bacon.*

PLANTA, a PLANT. See PLANT. Plants, in the Linnæan system, are thus distinguished:

1. PLANTA ANDROGYNA, an *androgynous* or *hermaphrodite* plant, which bears both male and female flowers.—The great majority of plants are of this kind.

K k k k 2

2. PLANTA

1. *PLANTA FOEMINEA*, a female plant, one of which bears female flowers only. Female plants are produced from the same seed with the male, and are arranged under the class of dioecia in the sexual method.

3. *PLANTA MAS*, a male plant, which bears only male flowers.

(1.) * *PLANTAGE*. *n. f.* [*plantago*, Lat.] A herb, or herbs in general.—

Truth, tired with iteration,

As true as steel, as *plantage* to the moon. *Shak.*

(2.) *PLANTAGE*. See *PLANTAGO*.

PLANTAGENET, the surname of 14 kings of England, from Henry II. to Richard III. inclusive. (See *ENGLAND*, § 23—36.) Antiquarians are much at a loss to account for the origin of this name; the best derivation they can find for it is, that Fulk, the first earl of Anjou of that name, being stung with remorse for some wicked action, went in pilgrimage to Jerusalem as a work of atonement; where, being soundly scourged with broom twigs, which grew plentifully on the spot, he ever after took the surname of *Plantagenet*, or *broomstalk*, which was retained by his noble posterity.

PLANTAGO, *PLANTAIN*; a genus of the monogynia order, belonging to the tetrandria class of plants. To this genus Linnæus has joined the coronopus and psyllium of Tournefort. Of these there are several distinct species, and some varieties; but as they are rarely cultivated in gardens, we shall only mention such of them as grow naturally in Britain. Of the plantain there are the following sorts: The common broad-leaved plantain, called *weybread*; the great hoary plantain, or lamb's-tongue; the narrow-leaved plantain, or ribwort; and the following varieties have also been found in England, which are accidental; the becom-plantain and rose-plantain. The plantains grow naturally in pastures in most parts of England, and are frequently very troublesome weeds. The common plantain and ribwort plantain are both used in medicine, and are so well known as to need no description. They are said to be slightly astringent; and the green leaves are commonly applied to fresh wounds by the common people.

1. *PLANTAGO CORONOPUS*, *Hartshorn*, or *buckshorn plantain*. There are two varieties growing in England, viz. the common buckshorn, which grows plentifully on heaths everywhere; and the narrow-leaved Welch sort, which is found upon many of the Welch mountains. The first of these was formerly cultivated as a salad herb in gardens, but has been long banished from thence for its rank disagreeable flavour; it is sometimes used in medicine.

2. *PLANTAGO PSYLLIUM*, *scawort*, is found growing naturally in England, and is used in medicine. It was found in the earth thrown out of the bottom of the canals which were dug for the Chelsea water-works, where it grew in great plenty. The seeds must have been buried there some ages, for no person remembered any of the plants growing in that neighbourhood before. The seeds of this species are sometimes used, as they are imported from the south of France.

(1.) * *PLANTAIN*. *n. f.* [*plantaïn*, Fr. *plan-*

tago, Lat.] 1. An herb.—The toad, being overcharged with the poison of the spider, as is believed, has recourse to the *plantain* leaf. *More*.—The most common simples are mugwort, *plantain*, and horsetail. *Wifeman*. 2. A tree in the West Indies, which bears an excellent fruit.—

I long my careless limbs to lay

Under the *plantain's* shade.

Waller.

(4.) *PLANTAIN*. See *PLANTAGO*.

(3.) *PLANTAIN, LEAST WATER*, the English name of the genus *Limosella*. *LIMOSELLA*, in botany, is a genus of the angiospermia order, belonging to the didynamia class of plants; and in the natural method ranks under the 21st order, *Precis*.

(4.) *PLANTAIN RIVER*, a river of Jamaica, which runs into the sea, at the east coast, N. by W. of Point Morant.

(5.) *PLANTAIN SHOT*. See *CANNA*, § I. N° 3.

(6.) *PLANTAIN, STAR-HEADED WATER*. See *ALISMA*, N° 2.

(7.) *PLANTAIN TREE*. See *MUSA*, N° III.

8.) *PLANTAIN, WATER*. See *ALISMA*.

* *PLANTAL*. *adj.* [from *plant*.] Pertaining to plants. Not used.—There's but little similitude betwixt a terreous humidity and *plantal* germinations. *Glanville*.

(1.) * *PLANTATION*. *n. f.* [*plantatio*, from *planto*, Latin.] 1. The act or practice of planting.

2. The place planted.—As swine are to gardens and orderly plantations, so are tumults to parliaments. *King Charles*.—

Some peasants

Of the same soil their nursery prepare,

With that of their *plantation*.

Dryden.

Let his *plantation* stretch from down to down.

Pope.

—Virgil was seated by Calliope in the midst of a *plantation* of laurel. *Addison*. 3. A colony. The principal thing, that hath been the destruction of most *plantations*, hath been the bafe and hasty drawing of profit in the first years; speedy profit is not to be neglected, as far as may stand with the good of the *plantation*. *Bacon*.—Towns here are few either of the old, or new *plantations*. *Heylen*. 4. Introduction; establishment.—Episcopacy must be cast out of this church, after possession here, from the first *plantation* of christianity in this island. *King Charles*.

(2.) *PLANTATION*, § I. *Def*. 3. See *COLONY*.

(3.) *PLANTATION*, in the West Indies, denotes a spot of ground which a planter, or person arrived in a new colony, pitches on to cultivate for his own use, or purchases for that purpose.

* *PLANTED*. *participle*. [from *plant*.] This word seems in *Shakespeare* to signify, settled; well grounded.—

A man in all the world's new fashion *planted*.

Shak.

* *PLANTER*. *n. f.* [*planteur*, Fr. from *plant*.]

1. One who sows, sets, or cultivates; cultivator.

There stood Sabinus, *planter* of the vines.

Dryden.

The cruel battle mows

The *planters*, with their harvest immature.

Philips.

That product only which our passions bear,
Eludes the *planter's* miserable care.

Prior.

2. One

2. One who cultivates ground in the West Indian colonies.—A *planter* in the West Indies might muster up, and lead all his family out against the Indians, without the absolute dominion of a monarch, descending to him from Adam. *Locke*.—

He to Jamaica seems transported,

Alone, and by no *planter* courted. *Swift*.

3. One who disseminates or introduces.—The Holy Apostles, the first *planters* of Christianity. *Nelson*.—Had these writings differed from the sermons of the first *planters* of Christianity in history or doctrine, they would have been rejected by those churches which they had formed. *Addison*.

(1.) **PLANTERSHIP. n. s.** in a general sense, the business of a planter.

(2.) **PLANTERSHIP**, in the West Indies, denotes the management of a sugar plantation, including not only the cultivation of the cane, but the various processes for the extraction of the sugar, together with the making of sugar spirits. See *RUM*, *SACCHARUM*, and *SUGAR*.

(3.) **PLANTERSHIP, GENERAL DIRECTIONS RESPECTING**. As it is the interest of every planter to preserve his negroes in health and strength, so every act of cruelty is not less repugnant to the master's real profit, than it is contrary to the laws of humanity: and if a manager considers his own ease and his employer's interest, he will treat all negroes under his care with due benevolence; for good discipline is by no means inconsistent with humanity: on the contrary, it is evident from experience, that he who feeds his negroes well, proportions their labour to their age, sex, and strength, and treats them with kindness and good nature, will reap a much larger product, and with infinitely more ease and self-satisfaction, than the most cruel taskmaster, who starves his negroes, or chastises them with undue severity. Every planter then, who wishes to grow rich with ease, must be a good economist; must feed his negroes with the most wholesome food, sufficient to preserve them in health and vigour. Common experience points out the methods by which a planter may preserve his people in health and strength. Besides plenty of wholesome food, there are other means, equally necessary to the strength and longevity of negroes, well worth the planter's attention: such as, to choose airy dry situations for their houses; and to observe that they be kept clean, in good repair, and perfectly water-tight; for nastiness, and the inclemencies of weather, generate the most malignant diseases. Having thus hinted the duties of a planter to his negroes, let the next care be of cattle, mules, and horses. The first care is to provide plenty and variety of food. In crop-time, profusion of cane-tops may be had for the labour of carriage; but they will be more wholesome and nutritious if tedded like hay by the sun's heat, and sweated by laying them in heaps a few days before they are eaten. In this season of abundance, great ricks of cane-tops (the butt ends turned inwards) should be made in the most convenient corner of each field, to supply the want of pasturage and other food: and these are very wholesome if chopped into small parts, and mixed sometimes with common salt or sprinkled with melasses mixed with water; but yet the cattle require change

of food to preserve them in strength; such as Guinea corn, and a variety of grass, which every soil produces with a little care in moist weather; and indeed this variety is found necessary in all climates. But since that variety is not to be had during those severe droughts to which hot climates are liable, and much less in those small islands which cannot furnish large tracts of meadow lands for hay, the only resource is the fodder of cane tops or tedded Guinea corn leaves; which are very nutritious, and may be preserved in perfection for more than a whole year, provided the tops or Guinea corn are well tedded for 3 or 4 hot days, as they lie spread in the field; and then, being tied into bundles or sheaves, they must lie in the hot sun for 3 or 4 days more, when they may be fit to be put up into ricks. The best method of making them is in an oblong figure, about 20 feet in length, and 16 or 18 feet wide; 7 feet high at the sides, and thence sloping like the roof of a house, the ridge of which must be thatched very carefully; for the sides may be secured from wet by placing the bundles with the butts upwards towards the ridge, in courses, and lapping the upper over the lower course. The best method of forming these ricks, is to place the first course of bundles all over the base one way; the second course reverse; and so alternately till the rick be finished. When cattle are to be fed with this fodder, it must be observed to take down the bundles from the top, at the west end of the rick, to the bottom; for all these ricks must stand E. and W. lengthwise, as well to secure them from being overturned by high winds, as for the convenience of preserving them from wet, which cannot be done when ricks are made round. By this husbandry, an herd of cattle may be kept in strength, either in severe droughts, or in wet seasons when grass is purgative; and thus the necessity or expence of large pastures may be saved. The hay-knife used in England for cutting hay, answers for cutting ricks of tops. The method of tedding Guinea corn to make a kind of hay, will require a little explanation. When Guinea corn is planted in May, and to be cut down in July, in order to bear seed that year, that cutting, tedded properly, will make an excellent hay, which cattle prefer to meadow hay. In like manner, after Guinea corn has done bearing seed, the after crop will furnish a great abundance of that kind of fodder which will keep well in ricks for two or three years. The next care of a planter is to provide a shade for his cattle; either by trees where they are fed in the heat of the day, if his soil requires not dung; or by building a flat shade over the pen where cattle are confined for making it. That such shades are indispensably necessary for the health of all animals, especially in hot weather, and in a hot climate, is indisputable.

(4.) **PLANTERSHIP, SOIL AND CULTIVATION, PROPER FOR**. In the British sugar colonies there is as great a variety of soils as in any country of Europe; some naturally very rich or fruitful, yielding a luxuriant product with little labour or culture. This fruitful soil is of three kinds: a loose hazel mould mixed with sand, like that of St Christopher's, and is the best in the known world

world for producing sugar in great quantity, and of the best quality. The brick mould of Jamaica is somewhat of the same nature, and next in value; and then the various mixtures of mould and gravel, to be found in veins or plats over all the other islands. When any of these soils are exhausted of their fertility by long and injudicious culture, they may be restored by any kind of dung well rotted; for these warm soils cannot bear hot unrotten dung, without being laid fallow for a considerable time after it. Another improvement is by sea-sand or sea-weed; or by digging in the cane-trash into steep lands, and by letting it lie to rot for some months. A 3d method is, by plowing and laying it fallow; and the 4th method (the best of all), is by folding the fallows by sheep. But this can be practised only where there are extensive pastures; nor can the plough be employed where the soil abounds with large stones. In that case, however, the former method of digging in trash will be nearly as effectual, though more expensive, by hand-labour or hoe-plowing. The next best soil for producing good sugar is a mould upon clay, which if shallow requires much culture and good labour, or its produce will be small in quantity, though of a strong grain and bright colour, so as to yield most profit to the refiner of any sugar, except that produced from an hazel or gravelly soil. All the black mould soils upon marle are generally fruitful, and will take any kind of dung; but yield not so strong or large grained sugar. Marle, however, of a white, yellow, or blue colour, or rich mould from washes, or ashes of every kind, are excellent for every strong soil, as the chief ingredient in the compost of dung: either of them will do alone for stiff lands; but the yellow and chocolate marle are the most soapy, and the richest kind of manure (except fine mould) for all stiff lands. If these are well opened, pulverized by culture, and mixed with hot dung, or any kind of loose earth or marle, they will produce as plentifully as lighter soils: and all kinds of clay soils, except that of a white colour, have these two advantages above the finest gravel soils, that they do not scorch soon by dry weather, and never grow weary of the same manure, as most other soils do. By the art of *caving*, 10 mules, or horses, and two light tumbrils with broad wheels, and ten able negroes, may, by the common use of spades, shovels, and light mattocks, or grubbing hoes, make more dung than 60 able negroes can do in the present methods. If marle lies upon rising ground, or in hillocks, as it often does, the pit is to be opened at the foot of the declivity; which being dug inwards till the bank is 3 feet high, is then to be *caved* thus. Dig an hollow space of 12 or 18 inches deep under the foot of the bank; then dig into each side of it another perpendicular cut of the same depth, and 18 inches wide from the top of the bank to the bottom: that being finished, make a small trench, a foot or two from the brink of the bank; pour into it water till full; and when that is done, fill it again, till the water soaking downward makes the marle separate and fall down all at once. This may be repeated till the pit rises to 50 feet high; and then many hundreds of cart-loads of marle may be thrown down

by four negroes in two hours; from whence it may be carted into cattle-pens, or laid out upon lands, as occasion requires. Five or six negroes with spades or shovels will keep two or three tumbrils employed, according to the distance of cartage: and thus as much dung may be made by ten negro men as will dung richly at least 70 or 80 acres of land every year, and laid out also with the assistance of cattle carts;—an improvement highly worth every planter's consideration, when negroes and feeding them are so expensive. In level lands, the same operation may be as effectual, provided the mouth of the pit be opened by gradual descent to any depth; but when marle is to be found on the sides of hills, the operation is less labourious for the horses. But if the surface of the marle-pits (as it often happens) be covered with clay or stiff soil, so that the water cannot quickly soak from the trench above; in that case, pieces of hard wood, made like piles, a feet long, and 4 inches square, pointed at one end, and secured at the other square head by an iron-clamp, may be driven by heavy mauls into the trench, as so many wedges, which will make the caved part tumble down; but a skilful eye must watch the last operation, or the labourers may be buried or hurt. But clay soils that are level, and subject to be overflowed, or to retain water in stagnated pools, can never be made fruitful by any kind of manure, without being first well drained; for water lying upon any soil will most certainly transform it to a stiff unfruitful clay; as appears evidently by the bogs of Ireland, the fens of Lincoln and Cambridgeshire, and even by the ponds of Barbadoes situated in the deepest and lightest black mould; for that fine soil being washed in those ponds, becomes the stiffest black clay, not fit even for an ingredient in dung, until it has been laid dry, and exposed to the sun for a whole year; but when these bogs and fens are well drained, they become the most fruitful soils. Natural clay the celebrated Boerhaave thinks the fattest of all soils; but then it must be opened by culture, marle, or sandy manures. A mixture of sand in gut mould is the best of all manure for stiff and barren clay lands; provided they be well drained, by throwing the whole soil into round ridges of 12 feet wide, with furrows of three feet wide between each ridge. And this is done with little more hand labour than that of hoe-plowing it well in the common way. For if a piece of land be marked in lines at $7\frac{1}{2}$ feet distance from each other, and the labourers are set in to hoe-plow at the second line, hauling back each clod 12 inches; half the ridge, and near half the furrow, is made at the same time: and thus a piece of land may be round-ridged, and the furrows all made at once, by the common operation of hoe-plowing, provided the digger drives his hoe up to the eye at every stroke. Hoe-plowing in clay soils that have lain long under water, is indeed hard labour; but it will every year grow the lighter by being well-drained by round ridging; and in the mean-while the labour may be rendered much more easy by the plough conducted by the lines above described. As therefore sandy mould is the best manure for stiff clay; so, by parity of reason, confirmed by long experience, stiff clay is the best of

manure for sandy or chaffy soils. This method of round-ridging is, by several years experience, found the most effectual improvement of flat clayey soils. But ridges were never proposed for light soils or steep lands; and even in flat soils upon loam they should be made with great caution, because *loam melts away by water*. But there are poachy lands of a white clay, even upon small defcents, too retentive of water; these may certainly be improved much by ridges of 12 feet wide, as above described, without fear of washes. The general maxim of not burning cane-trash (which may be called the *stubble of cane-lands*) upon any kind of soil, is a great mistake; as may be evinced by observing the contrary practice of the best husbandmen in England, where burn-baiting is found an admirable method of fertilizing cold, stiff, or clayey lands. It must indeed be a constant practice, not only for the sake of contributing to warm and divide the soil, but as the only effectual means of destroying pernicious insects, and weeds of various kinds, such as French weed, wild pease, and wild vines. Deep mould upon clay or loam, being subject to the grub-worm, will not take any kind of dung, till perfectly rotten, except that of the sheep-fold; which is the best manure for all kinds of light soils, and is of all others the least expensive, as not requiring hand-labour. But the use of the fold is impracticable in any island not abounding with large savannas or sheep-pastures, as in Jamaica. Those soils therefore which are subject to the grub, and must be fertilized by common dung, which is a proper nest for the mother beetle to deposit its eggs, must be well impregnated with the brine of dissolved salt, after the dung is first cut up; two large hogheads of salt will make brine enough for a dung-pen of 50 feet square. This cure for the grub is a late discovery, and has been attended with success. But though it proves effectual to destroy that pernicious insect in plant-canes, it will not be sufficient to save ratoonns, without a new application of salt in powder; because the first brine must be washed away by the time ratoonns spring. The planter who would save his ratoonns from the grub ought therefore to cut off the heads of his stools with sharp hoes 3 inches below the surface of the soil, and then strew an handful of salt round each stool, and cover it up to a level with fine mould taken from the edges. In the soils where there is no grub, and the planter wishes to have very good ratoonns, let him, as soon as his canes are cut, draw all the trash from the stools into the alternate spaces, if planted in that manner; or into the furrows, if his land be round-ridged; and then cut off the head of his stools with sharp hoes, as above directed. Experience has shown the great benefit of the ratoon sprouts rising from three inches below the surface, instead of superficial shoots which come to nothing, and only starve the strong sprouts. Besides, the stubs, which are left upon the stools after the canes are cut, rot the stools; which is one reason why good ratoonns are uncommon in soils long cultivated. Yet it is the opinion of some, that by hoe-plowing and even dunging ratoonns, the produce might be as good plant-canes, which would save the labour of holing and planting so often as

planters commonly do. Fallowing is of incredible advantage to every soil, not only by being divided into the minutest parts, but also by imbibing those vegetative powers with which the air is impregnated by the bountiful hand of Providence, whenever rain falls. What those powers are, has been explained under PLANT, § 10, 15, and experience evinces, that tender vegetables of the earth are invigorated more by the smallest shower of rain, than by all the water which human art can bestow. Let it therefore be a constant maxim of the planter, never to plant his ground until the soil is well mellowed by fallowing, even though he bestows upon it a due proportion of dung: for too much will force up rank canes, which never yield good sugar; and though some advantage may be reaped from the ratoonns, yet it will not compensate the loss by the plants. In stony or steep soils, where the plough cannot be used, or where a sufficient strength of cattle cannot be supported for that purpose, hand-labour, or hoe-ploughing must be substituted: but even in that case, much labour may be saved by spreading the dung according to the English husbandry, and digging it into the soil. To evince this truth, let any planter compute his negroes labour of distributing dung by baskets, and by spreading it with dung-forks; and then judge for himself by one single experiment which is the most profitable. As to weeding, by the use of the Dutch hoe, he may dispatch more work than by any other. The Dutch hoe being fastened upon the end of a stick, is pushed forward under the roots of the small weeds, in such a manner as to cut them up a little below the surface of the soil, and will do more execution at one shove than can be done by three strokes of the common hoe: but there is yet another practice of the horse-hoe plough, whereby all weeds growing in rows between beans and pease, are extirpated with incredible ease and expedition. It is a very simple machine, drawn by one or two horses, consisting of a pair of low wheels turning upon a common axis; from whence two square irons are let down at equal distances, and triangular hoes made at the ends, the points of the triangles being placed forward, and so fixed as to cut all weeds an inch below the surface, in the same manner as the Dutch garden hoe above-mentioned. By this machine a man and a boy, with two horses or mules, will clear perfectly all the spaces of a field of ten acres in two days, and may be of admirable use in all loose and dry soils in the sugar islands: for while a horses or mules draw in the space before each other, the wheels pass on the outside of each row of canes, without doing the least injury, while the plough-holder attends to his business. In stiff soils which require draining, neither the horse-hoe plough nor the Dutch hoe can be proper; or any other instrument so effectual as the spade used in the manner above hinted, where the staple is deep. But where the staple of land is shallow, care must be taken not to dig much below it, according to the universal opinion of all the best writers, supported by the experience of 100 years. Yet some good planters are fallen into the contrary practice, and dig up stiff clay far below the staple. This, Mr Martin says, was done in his own lands; during his absence

sente, by injudiciously ploughing below the staple; and so injured the soil, that all the arts of culture for many years hardly retrieved its former fertility. Indeed, where the staple is shallow, upon a fat clay, the turning up a little of it at a time, from the bottom of the cane-holes, and mixing it with rich hot dung, made of marle, or sandy mould, which may take off its cohesive quality, will, in due time, and by long fallow, convert it into good soil: but if stiff clay be turned up, without any such mixture, in large quantities, it will infallibly disappoint the operator's hopes; for though solid clay will moulder, by exposure, to a seeming fine earth, yet it will return to its primitive state very soon after being wet, and covered from the external air, if not divided as above suggested. After all, the common horse-hoeing plough drawn by two mules in a line before each other, or the hand-hoe in common use, will answer the purpose very well, where the lands are planted in Mr Tull's method; that is, where the spaces are equal to the land planted in the following manner: Besides all the advantages of planting the land in alternate double rows with equal spaces, the canes, when at full age, may be easily stripped of their trash, and the juice thus rendered so mature as to yield double the produce, and much better sugars than unstripped canes. This method of culture may be recommended for all kinds of soil: for, as by this practice the rank luxuriant canes will be more matured, so the poor soils will be rendered more fruitful; and as the roots of the canes which expand into these spaces will be kept moist by being covered with rotten trash, so much longer in the burning soils. In those low lands which require draining by furrows, the alternate double rows and spaces must be made cross the ridges; by which means those spaces, being hoe-ploughed from the centre to the sides, will be always preserved in a proper state of roundness. By this method of planting, the canes may be so well ripened as to yield double the quantity of sugar of canes planted in the close manner; which saves half the labour of cartage, half the time of grinding and boiling, and half the fuel, besides yielding finer sugar. Yet, how well soever the method of planting in single or double alternate rows has succeeded in the loose and stiff soils, it is a wrong practice in stiff lands that are thrown into round or flat ridges: for these being most apt to crack, the sun-beams penetrate soon to the caneroots, stop their growth, and have an ill influence upon the sugar. It is therefore advisable to plant such lands full, but in large holes, of 4 feet by 5 feet towards the banks: after the plant-canes are cut, to dig out one, and leave two rows standing, hoe-ploughing the spaces after turning all the trash into furrows till almost rotten: for if the trash is drawn upon the hoe-ploughing spaces, they will hardly ever moulder, at least, not till the trash is quite rotten. This is an infallible proof from experience of how little advantage trash is to the soil, unless it be in great droughts, to keep out the intense sun-beams: for, in all other respects, it prevents that joint operation of the sun and air in mouldering and fructifying the soil, as has been proved by repeated experiments. But in flat stiff

soils that are properly drained by round-ridging, no culture prevents cracking so effectually as hoe-ploughing into them a quantity of loose marle, of which that of a chocolate or of a yellow colour is best; and it will be still much better, by lying upon the land, in small heaps, or in cane-holes, for some time to imbibe the vegetative powers of the air before it is intimately mixed with the soil. As to the manner of planting canes, the general practice of 4 feet by 5 to a hole, and two fresh plants, is found by experience to be right in alternate rows. But the following precautions are necessary to be observed. First, let all the canerows run E. and W. that the trade wind may pass freely through them. 2dly, Let not any accession of mould be drawn into hills round the young canes, except where water stagnates; because the fibres which run horizontally, and near the surface, are much broken and spoiled by that practice. 3dly, Let the sugar-canes be cut at their full maturity; which, in a dry loose soil, is generally at the end of 14 or 15 months after being planted; but in cold clay-soils, not till 16 or 17 months. 4thly, As the cane-rows run E. and W. in as proper a direction as possible for cartage to the sugar work, so canes must be cut the contrary way if the planter expects any great produce from his ratoon: for by beginning to cut canes at the part of his field most remote from the works, the carts cannot often pass over the same tract, and consequently the cane-stools cannot be injured, more especially if he takes due care to cut the canes very close to their roots; for, by leaving a long stub (which must perish) the cane-stools are much injured. In round-ridged land, it is proper to cut canes in the same direction of the ridges, throwing the tops and trash into the furrows to render the cartage easy, and to preserve the ridges in their proper form. The expediency of planning the cane-pieces of a plantation in exact squares, so that the intervals may intersect at right angles is obvious, since such regularity is not only more beautiful, more safe in case of accidental fires, and a better disposition of the whole for dividing and planting one third or fourth part of a plantation every year, but also much easier guarded by a few watchmen: for one of these walking in a line from E. to W. and the other from N. to S. look through every avenue, where the most subtle thief cannot escape the watchful eye. And if the intervals surrounding the boundary of a regular plantation be made 24 feet wide, the proprietor will receive ample recompense for so much land, by the security of his canes from fires kindled in the neighbourhood, and by planting all that land in plantain trees, which may at once yield food and shade to the watchmen, who thus can have no excuse for absence from their proper stations. But as fuel grows very scarce in most of our islands, it is also expedient to plant a logwood or flower fence in all the boundaries of every plantation, which, being cut every year, will furnish good store of faggots. Logwood makes the strongest and quickest of all fences, and agrees with every soil: the cuttings make excellent oven-fuel. Such are the general operations of planterhsip, according to the approved directions of Mr Martin. For the

the particular cultivation of the sugar-canes, the extraction of sugar, and the distillation of rum, *fec RUM, SACCHARUM, and SUGAR.*

PLANTIN, Christopher, a celebrated printer, was born near Tours in 1733, and bred to an art which he carried to the highest degree of perfection. He went and settled at Antwerp, and there erected a printing-office, which was considered not only as the chief ornament of the town, but as one of the most extraordinary edifices in Europe. A great number of ancient authors were printed; and these editions were valued not only for the beauty of the characters, but also for the correctness of the text; with regard to which Plantin was so very nice, that he procured the most learned men to be correctors of his press. He got immense riches by his profession; which, however, he did not hoard up, but spent like a gentleman. He died in 1598, aged 65; and left a most sumptuous and valuable library to his grandson Balthazar.

(1.) **PLANTING**, *part. n. f.* in agriculture and gardening, is setting a tree or plant taken from its proper place, in a new hole or pit: throwing fresh earth over its root, and filling up the hole to the level of the surface of the ground. The first thing in planting is to prepare the ground before the trees or plants are taken out of the earth, that they may remain out of the ground as short a time as possible; and the next is to take up the trees or plants to be transplanted. In taking up the trees, carefully dig away the earth round the roots, so as to come at their several parts to cut them off; for if they are torn out of the ground without care, the roots will be broken and bruised, to the great injury of the trees. The next thing is to prepare them for planting, by pruning the roots and heads. And first, as to the roots, all the small fibres are to be cut off, as near to the place from whence they are produced as may be, except they are to be replanted immediately after they are taken up. Then prune off all the bruised or broken roots, all such as are irregular and cross each other, and all downright roots, especially in fruit-trees; shorten the larger roots in proportion to the age, the strength, and nature of the tree; observing that the walnut, mulberry, and some other tender-rooted kinds should not be pruned so close as the more hardy sort of fruit and forest trees: in young fruit-trees, such as pears, apples, plums, peaches, &c. that are one year old from the time of their budding or grafting, the roots may be left only about 8 or 9 inches long; but in older trees, they must be left of a much greater length: but this is only to be understood of the larger roots; for the small ones must be mostly cut quite out, or pruned very short. The next thing is the pruning of their heads, which must be differently performed in different trees; and the design of the trees must also be considered. Thus, if they are designed for walls or espaliers, it is best to plant them with the greatest part of their heads, which should remain on till they begin to shoot in the spring, when they must be cut down to 5 or 6 eyes, taking care not to disturb the roots. But if the trees are designed for standards, prune off all the small branches close to the place where they are produced, also the irregular ones which cross each other; and after having displaced these

branches, cut off all such parts of branches as have by any accident been broken or wounded; but by no means cut off the main leading shoots which are necessary to attract the sap from the root, and thereby promote the growth of the tree. Having thus prepared the trees for planting, proceed to place them in the earth: but first, if the trees have been long out of the ground, so that the fibres of the roots are dried, place them 8 or ten hours in water before they are planted, with their heads erect, and the roots only immersed therein; which will swell the dried vessels of the roots, and prepare them to imbibe nourishment from the earth. In planting them, great regard should be had to the nature of the soil: for if that be cold and moist, the trees should be planted very shallow: and if it be a hard rock or gravel, it will be better to raise a hill of earth where each tree is to be planted than to dig into the rock or gravel, and fill it up with earth, as is too often practised, by which means the trees are planted as it were in a tub, and have but little room to extend their roots. The next thing to be observed is, to place the trees in the hole in such a manner that the roots may be about the same depth in the ground as before they were taken up; then break the earth fine with a spade, and scatter it into the hole, so that it may fall in between every root, that there may be no hollows in the earth; then having filled up the hole gently, tread down the earth with your feet, but do not make it too hard; which is a great fault, especially if the ground be strong or wet. Having thus planted the trees, they should be fastened to stakes driven into the ground, to prevent their being displaced by the wind, and some mulch laid upon the surface of the ground about the roots; As to such as are planted against walls, their roots should be placed about five or six inches from the wall, to which their heads should be nailed to prevent their being blown up by the wind. The seasons for planting are various, according to the different sorts of trees, or the soil in which they are planted. For the trees whose leaves fall off in winter, the best time is the beginning of October, provided the soil be dry; but if it be a very wet soil, it is better to defer it till the end of Feb. or beginning of March: and for many kinds of evergreens, the beginning of April is by far the best season, though they may be safely removed at midsummer, provided they are not to be carried very far; but should always make choice of a cloudy wet season. In the 1d vol. of the Bath Society's Papers, a letter on planting waste ground relates, that, "about 30 (now 40) years ago, the W. part of it abounded with sand, so very light that it was blown away with the wind; that Mr Buxton of Shadwell Lodge, near Thetford, mixed fine white and yellow marl with this light soil, and planted Scots and spruce firs in it which soon corrected the looseness of the soil; so that it was quickly covered, not only with grass and herbs, but with vast plantations of firs, oaks, and forest trees. The benefit of plantations, whether of shrubs, copse, or trees, is not confined to the immediate advantage, or even the future value of the wood. By annually shedding a great number of leaves, which the winds disperse and the rains wash into the soil, it is considerably improved;

and whenever such copfes have been stubbed up, the ground (however unfruitful before planting) has thereby been so enriched as to bear excellent crops for many years, without the additional help of manure. How much land-owners are interested, in planting waste or barren spots, I need not mention; and nothing but a degree of indolence or ignorance, unpardonable in this enlightened age, could induce them to neglect it. Nature has furnished us with plants, trees, and shrubs, adapted to almost every soil and situation; and as the laws of vegetation are now much better understood than formerly, it is a reproach to those whose practice does not keep pace with their knowledge in making the best use of her bounty. Let no man repine and say *the land is barren*; for those spots which appear to be so, owe that appearance to human negligence. Industry and art might soon render an eight part of this kingdom nearly as valuable as all the rest, which now remains in a state unprofitable to the owners, and disgraceful to the community."

(2.) **PLANTING, REVERSE**, a method of planting in which the natural position of the plant or shoot is inverted; the branches being set into the earth, and the root reared into the air. Dr Agricola and Dr Bradley mention this monstrous method of planting, and that it succeeded very well in most or all sorts of fruit-trees, timber-trees, &c. Mr Fairchild of Hoxton has practised the same, and gives the following directions for performing it: "Make choice of a young tree of one shoot, of alder, elm, willow, or any other tree that easily takes root by laying; bend the shoot gently down into the earth, and so let it remain until it has taken root. Then dig about the first root, and raise it gently out of the ground, till the stem be nearly upright, and stake it up. Then prune the roots now erected in the air, from the bruises and wounds they received in being dug up; and anoint the pruned parts with a composition of 2 oz. of turpentine, 4 oz. of tallow, and 4 oz. of bees wax, melted together, and applied pretty warm. Afterwards, prune off all the buds or shoots that are upon the stem, and dress the wounds with the same composition, to prevent any collateral shootings, that might spoil the beauty of the stem."

PLANT-LICE, or **PUCERONS**. See **APHIS**.

PLANTULE. *n. f.* A small plant; a very young plant, or a plant in embryo.

PLANUDES, Maximus, a Greek monk of Constantinople, towards the end of the 14th century, who published a collection of epigrams entitled *Antologia*; a Greek translation of Ovid's *Metamorphoses*; a Life of Esop, which is rather a romance than a history; and some other works. He suffered some persecution on account of his attachment to the Latin church.

PLAQUEMINES, a country of the United States, in Louisiana, about 40 miles from the Sea. It is low and swampy, mostly covered with reeds. It was overflowed in 1764, and much damaged.

PLARDWICK, a small town of England, in Staffordshire, E. of Forton.

PLASCHKEN, a town of Prussian Lithuania, 9 miles W. of Tilsit.

PLASENCIA, a town of Spain. See **PLACENTIA**, N^o 4. and 5. Mr Cruttwell adopts this singular spelling, as he does many others, quite different from other geographers.

* **PLASH**. *n. f.* [*plafche*, Dutch; *platz*, Danish.] 1. A small lake of water or puddle.—

He leaves

A shallow *plash* to plunge him in the deep. *Shak.*
—Many *plashes*, that they had repaired to were dry. *Bacon*.—I understand the aquatic or water frog, whereof, in ditches and standing *plashes*, we behold millions. *Brown*.

With filth the miscreant lies bewray'd,

Fall'n in the *plash* his wickedness had laid. *Pope*.
2. [from the verb *To splash*.] Branch partly cut off and bound to other branches.—In the *plashing* your quick, avoid laying of it too low and too thick, which makes the sap run all into the shoots, and leaves the *plashes* without nourishment. *Mort.*

* **TO PLASH**. *v. a.* [*plesser*, Fr.] To interweave branches.—Plant and *plash* quicksets. *Evelyn*.

PLASHING OF HEDGES, is an operation thought by some persons to promote the growth and continuance of old hedges; but whether the fact be so or not will admit of some dispute. See **HEDGES**, § 3—12. It is thus performed: The old stubs must be cut off, &c. within two or three inches of the ground; and the best and longest of the middle-sized shoots must be left to lay down. Some of the strongest of these must also be left to answer the purpose of stakes. These are to be cut off to the height, at which the hedge is intended to be left; and they are to stand at ten feet distance one from another: when there are not proper shoots for these at the due distances, their places must be supplied with common stakes of dead wood. The hedge is to be first thinned, by cutting away all but those shoots which are intended to be used either as stakes, or the other work of the *plashing*: the ditch is to be cleaned out with the spade; and it must be now dug as at first, with sloping sides each way; and when there is any cavity on the bank on which the hedge grows, or the earth has been washed away from the roots of the shrubs, it is to be made good by facing it, as they express it, with the mould dug from the upper part of the ditch: all the rest of the earth dug out of the ditch is to be laid upon the top of the bank: and the owner should look carefully into it that this be done; for the workmen are apt to throw as much as they can upon the face of the bank; which, being thus overloaded, is soon washed off into the ditch again, and a very great part of the work undone; whereas, what is laid on the top of the bank always remains there, and makes a good fence of an indifferent hedge. In the *plashing* the quick, two extremes are to be avoided; these are, the laying it too low, and the laying it too thick. The latter makes the sap run all into the shoots, and leaves the *plashes* without sufficient nourishment; which, with the thickness of the hedge, finally kills them. The other extreme of laying them too high, is equally to be avoided; for this carries up all the nourishment into the *plashes*, and so makes the shoots small and weak at the bottom, and consequently the hedge thin. This is a common error in the north of England. The best hedges made anywhere

anywhere in England are those in Hertfordshire; or they are plashed in a middle way between the two extremes, and the cattle are thus prevented both from cropping the young shoots, and from going through; and a new and vigorous hedge is soon formed. When the shoot is bent down that is intended to be plashed, it must be cut half way through with the bill; the cut must be given loping, somewhat downwards, and then it is to be wound about the stakes, and after this its superfluous branches are to be cut off as they stand out at the sides of the hedge. If for the first year or two, the field where a new hedge is made can be ploughed, it will thrive the better for it; but if the stubs are very old, it is best to cut them quite down, and to secure them with good dead hedges on both sides, till the shoots are grown up from them strong enough to plash; and wherever void spaces are seen, new sets are to be planted to fill them up. A new hedge raised from sets in the common way, generally requires plashing in about 8 or 9 years after.

* **PLASHY.** *adj.* [from *plash*.] Watery; filled with puddles.—

Near stood a mill in low and *plashy* ground.

Betterton.

* **PLASM.** *n. f.* [πλάσμα.] A mould; a matrix; in which any thing is cast or formed.—The hells served as *plasm*s or moulds to this sand. *Woodward.*

PLASSAC, a town of France, in the dep. of the Lower Charente; 8 miles S. of Mirabeau.

PLASSENDAL, a fortress of the French empire, in the department of the Lys, and late prov. of Austrian Flanders; seated on the canal between Bruges and Ostend, 3 miles E. of Ostend.

PLASSEY, a town, plain, and grove, near the city of Muxadah in India, famous for a battle fought between the British under Lord Clive and the native Hindoos under the Nabob Surajah Dowlah, in 1757. The British army consisted of about 1200 men, of whom the Europeans did not exceed 900; while that of the Nabob consisted of 50,000 foot, and 18,000 horse. Notwithstanding his great disproportion, however, Lord Clive effectually routed the Nabob and his forces, with the loss of 3 Europeans and 26 Seapoys killed, and 5 Europeans and 40 Seapoys wounded. The Nabob's loss was estimated at about 200 men, besides oxen and elephants. See **CLIVE**, N° 2. The town of Plassey lies 25 miles S. of Moorshedabad, and 70 from Calcutta.

(1.) * **PLASTER.** *n. f.* [*plastre*, Fr. from πλάσσω.] Substance made of water and some absorbent matter, such as chalk or lime well pulverised, with which walls are overlaid or figures cast.—In the same hour came forth fingers of a man's hand, and wrote upon the *plaster* of the wall. *Dan. v. 5.*

The floors of *plaster*, and the walls of dung.

Pope.

—Maps are hung up so high, to cover the naked *plaster*. *Watts on the Mind.* 2. [*Emplastrum*, Lat. in English, formerly *emplaster*.] A glutinous or adhesive salve.—Seeing the fore is whole, why retain we the *plaster*? *Hooker.*

You rub the fore,

When you should bring the *plaster*. *Shak.*

—It not only moves the needle in powder, but

likewise, if incorporated with *plasters*, as we have made trial. *Brown.*—*Plasters*, that have any effect, must be by dispersing or repelling the humours. *Temple's Misc.*

(2.) **PLAISTER**, or **EMPLASTER**, in pharmacy, an external application of a harder consistence than an ointment; to be spread, according to the different circumstances of the wound, place, or patient, either upon linen or leather. See **PHARMACY**, *Index*.

(3.) **PLASTER**, or **PLAISTER**, in building, a composition of lime, sometimes with sand, &c. to *parget*, or cover the nudities of a building. See **PARGETING** and **STUCCO**.

(4.) **PLASTER OF PARIS**, a preparation of several species of gypsum dug near Mount Maitre, a village near Paris; whence the name. See **ALABASTER**, *CHEMISTRY*, *Index*, **GYPSUM**, *MINERALOGY*, &c. The best sort is hard, white, shining, and marbly; known by the name of *plaster stone*, or *parget of Mount Maitre*. It neither gives fire with steel, nor ferments with aquafortis; but readily calcines into a fine plaster, the use of which in building and casting statues is well known. According to Bergman, it contains 32 parts calcareous earth, 46 of vitriolic acid, and 22 water.

(5.) **PLASTER OF PARIS**, **EXPERIMENTS ON**. Two or three spoonfuls of burnt alabaster, mixed up thin with water, in a short time coagulate, at the bottom of a vessel full of water, into a hard lump, notwithstanding the water that surrounded it. Artificers observe, that the coagulating property of burnt alabaster will be very much impaired or lost, if the powder be kept too long, especially in the open air, before it is used; and when it hath been once tempered with water, and suffered to grow hard, they cannot, by any burning or powdering of it again, make it serviceable for their purpose as before. This matter, when wrought into vessels, &c. is still of so loose and spongy a nature, that the air has easy passage through it. Mr Boyle gives an account, among his experiments with the air pump, of his preparing a tube of this plaster, closed at one end and open at the other; and on applying the open end to the cement, as is usually done with the receivers, it was found utterly impossible to exhaust all the air out of it; for fresh air from without pressed in as fast as the other, or internal air, was exhausted, though the sides of the tube were of a considerable thickness. A tube of iron was then put on the engine; so that being filled with water, the tube of plaster of Paris was covered with it; and on using the pump, it was immediately seen, that the water passed through into it as easily as the air had done, when that was the ambient fluid. After this, trying it with Venice turpentine instead of water, it succeeded; and the tube could be perfectly exhausted, and would remain in that state several hours. After this, on pouring some hot oil upon the turpentine, the case was altered; for the turpentine melting with this, that became a thinner fluid, and in this state capable of passing like water into the pores of the plaster. On taking away the tube, the turpentine, which had pervaded and filled its pores, rendered it transparent, in the manner that water gives transparency to that singular stone called **OCULUS**

MUNDI. In this manner, the weight of air, under proper management, will be capable of making several sorts of glues penetrate plaster of Paris; and not only this, but baked earth, wood, and all other bodies, porous enough to admit water.

(6.) **PLASTER OF PARIS, METHOD OF TAKING A FACE IN.** The method of representing a face truly in plaster of Paris is this: The person, whose figure is designed, is laid on his back, with any convenient thing to keep off the hair. Into each nostril is conveyed a conical piece of stiff paper, open at both ends, to allow of respiration. These tubes being anointed with oil, are supported by the hand of an assistant; then the face is lightly oiled over, and the eyes being kept shut, alabaſter, freſh calcined, and tempered to a thinniſh conſiſtence with water, is by ſpoonfuls nimblely thrown all over the face, till it lies near the thickneſs of an inch. This matter grows ſenſibly hot, and in about a quarter of an hour hardens into a kind of ſtony concretion; which being gently taken off, preſents, on its concave ſurface, the minuteſt part of the original face. In this a head of good clay may be moulded, and therein the eyes are to be opened, and other neceſſary amendments made. This ſecond face being anointed with oil, a ſecond mould of calcined alabaſter is made, conſiſting of two parts joined lengthwiſe along the ridge of the noſe; and herein may be caſt, with the ſame matter, a face extremely like the original.

(7.) **PLASTER OF PARIS, USE OF, AS A MANURE.** Plaster of Paris is uſed as a manure in Pennſylvania, as we find by a letter from a gentleman in that country, inſerted in the Bath Society Papers, vol. 5. of which the following is an extract: "The beſt kind is imported from hills in the vicinity of Paris; it is brought down the Seine, and exported from Havre de Grace. There are large beds of it in the Bay of Fundy, ſome nearly as good as that from France. The lumps compoſed of flat ſhining ſpecula are preferred to thoſe formed of round particles like ſand: the method of finding out the quality is to pulverize ſome, and put it dry into an iron pot over the fire; when that which is good will ſoon boil, and great quantity of the fixed air eſcape by ebullition. It is pulverized by fiſt putting it in a ſtamping-mill. The finer its pulverization the better, as it will thereby be more generally diſſuſed. It is beſt to ſow it in a wet day. The proper quantity for graſs is ſix buſhels per acre. No art is required in ſowing it but making the diſtribution as equal as poſſible. It operates altogether as a top manure, and therefore ſhould not be put on in the ſpring, until the principal froſts are over and vegetation hath begun. The general time for ſowing with us is in April, May, June, July, Auguſt, and September. Its effects generally appear in 10 or 15 days; after which the growth of the graſs will be ſo great as to produce a large burden at the end of ſix weeks. It muſt be ſown on dry land, not ſubject to be overſhown. I have ſown it on ſand, loam, and clay, and it is difficult to ſay on which it has beſt answered. It has been uſed as a manure in this ſtate for upwards of 12 years. In all experiments with clo-

ver, mix about one 3d timothy graſs ſeed; it very much facilitates the curing of clover, and when cured is a ſuperior fodder. The plaſter operates equally well on the other graſſes. On Indian corn its operation is great; we uſe it at the rate of a table ſpoonful for a hill, put immediately after dreſſing. From ſome accurate experiments made and reported to our Agricultural Society, it appears that 9 buſhels of additional corn per acre were produced by this method of uſing plaſter."

* To **PLASTER**. *v. a.* [*plasterer*, French, from the noun.] 1. To overlay with plaſter.—

Boils and plagues

Plaster you o'er.

The harlot's cheek beautified with *plaffring* art.

Shak.

Shak.

—A heart ſettled upon a thought of underſtanding is as a fair *plastering* on the wall. *Ecclef. xxii. 17.*—With cement of flour, whites of eggs and ſtone powdered, *piſcina mirabilis* is ſaid to have walls *plastered*. *Bacon.*—

Plaster the chinky hives with clay. *Dryden.*

—The brain receives not much more impreſſion, than if you wrote with your finger on a *plaster'd* wall. *Watts.* 2. To cover with a viſcous ſaive or medicated plaſter.

* **PLASTERER**. *n. f.* [*plasterier*, Fr. from *plaster*.] 1. One whoſe trade is to overlay walls with plaſter.—

Thy father was a *plasterer*.

Shak.

2. One who forms figures in plaſter.—The *plasterer* makes his figures by addition, and the carver by ſubtraction. *Watton.*

PLASTERING, *part. n. f.* See **PARGETING**.

(1.) * **PLASTICK**. *adj.* [*πλαστικός*.] Having the power to give form.—

Benign Creator! let thy *plastick* hand

Diſpoſe its own effect.

Prior.

—There is not any thing ſtrange in the production of the formed metals, nor other *plastic* virtue concerned in ſhaping them into thoſe figures, than merely the configuration of the particles. *Woodward.*

(2.) **PLASTIC** denotes a thing endowed with a formative power, or a faculty of forming or faſhioning a maſs of matter after the likeneneſs of a living being.

(3.) **PLASTICK ART**, the art of representing all ſorts of figures by the means of moulds. This term is derived from the Greek, *πλαστικός*, the art of forming, modelling, or caſting in a mould. A mould in general is a body that is made hollow for that purpoſe. The artiſt makes uſe of them to form figures in bronze, lead, gold, ſilver, or any other metal or ſuſtible ſubſtance. The mould is made of clay, ſucco, or other compoſition, and is hollowed into the form of the figure that is to be produced; they then apply the jet, which is a ſort of funnel, through which the metal is poured that is to form the figures, and that is called *running the metal into the mould*. It is thus, after much practice and attention, that the artiſt forms, 1. Equeſtrian and pedeſtrian ſtatues of every kind; 2. Groups; 3. Pedeſtals; 4. Baſ-reliefs; 5. Medallions; 6. Cannons, mortars, and other pieces of artillery; 7. Ornaments of architecture, as capitals, baſes, &c.; 8. Various ſorts

of furniture, as lustres, branches, in every kind of metal; and in the same manner figures are cast in stucco, plaster, or any other fusible matter. See PLASTER, § 6. Wax being a substance that is very easily put in fusion, plasticks make much use of it. There are impressions which are highly pleasing in coloured wax, of medallions, basso and alto reliefs, and of detached figures; which, however, are somewhat brittle. But this matter, some think, has been carried too far: they have not only formed moulds to represent the likeness and the bust of a living person, by applying the plaster to the face itself, and afterwards casting melted wax into the mould; but they have also painted that waxen bust with the natural colours of the face, and have then applied glass eyes and natural hair; to which they have joined a stuffed body and limbs, with hands of wax; and have, lastly, dressed their figure in a real habit. But if a close imitation of nature in painting and statuary, upon canvas, and in stone or metal, has been admired in all ages, we cannot see why an equally close imitation in wax should not be equally an object of admiration. There is another invention no less ingenious and pleasing, which is that wherein M. Lippart, antiquary and artist at Dresden has so much excelled. He has found the means of resembling, by indefatigable labour, great expence, and infinite taste, that immense number of stones, engraved and in cameau, which are to be seen in the most celebrated cabinets. (See PASTES, § 11.) He has made choice of those that are the most beautiful; and, with a paste of his own invention, he takes from these stones an impression that is surprisingly accurate, and which afterwards becomes as marble: these impressions he calls *passi*. He then gives them a proper colour, and incloses each with a gold rim; and, by ranging them in a judicious order, forms of them an admirable system. They are fixed on pasteboards, which form so many drawers, and are then inclosed in cases, which represent folio volumes, and have titles written on their backs; so that these fictitious books may conveniently occupy a place in a library. Nothing can be more ingenious than this invention; and, by means of it, persons of moderate fortune are enabled to make a complete collection of all that antiquity has left that is excellent of this kind; and the copies are very little inferior to the originals. There is also another method of taking the impressions of cameaus, medals, and coins, which is as follows: They wash or properly clean the piece whose impression is to be taken, and surround it with a border of wax. They then dissolve singlas in water, and make a decoction of it, mixing with it some vermillion, to give it an agreeable red colour. They pour this paste, when hot, on the stone or medal, to the thickness of about the tenth part of an inch; then leave it exposed to the sun, in a place free from dust. After a few days this paste becomes hard, and offers to the eye the most admirable and faithful representation of the medal that it is possible to conceive: they are then carefully placed in drawers; and thousands of these impressions which comprehend many ages, can be included in a small compass. The proficient in plasticks have likewise invented

the art of casting in a mould papier maché or dissolved paper, and forming it into figures, in imitation of sculpture, of ornaments and decorations for ceilings, furniture, &c. and which they afterwards paint or gild. There are, however, some inconveniences attending this art; as, for example, the imperfections in the moulds, which render the contours of the figures inelegant, and give them a heavy air: these ornaments, moreover, are not so durable as those of bronze or wood, seeing that in a few years they are preyed on by worms. The figures that are given to porcelain, Delft ware, &c. belong also to plasticks; for they are formed by moulds, as well as by the art of the sculptor and turner; and by all these arts united are made vases of every kind, figures, groups, and other designs, either for use or ornament. See CASTING, DELFT, § 3, FOUNDRY, GLAZING, PAPIER MACHÉ, PORCELAIN, POTTERY, &c.

(4.) PLASTIC NATURE, a certain power by which, as an instrument, many philosophers, both ancient and modern, have supposed the great motions in the corporeal world, and the various processes of generation and corruption, to be perpetually carried on. Among the philosophers of Greece, such a power was almost universally admitted. It seems, indeed, to have been rejected only by the followers of Democritus and Epicurus, who talk as if they had thought gravity essential to matter, and the *fortuitous* motion of atoms, which they held to have been from eternity, the source, not only of all the *regular* motions in the universe, but also of the *organization* of all corporeal systems, and even of *sensation* and *intelligence* in brutes and in men. It is evident that those men, whatever they might profess, were in reality atheists; and Democritus avowed his atheism. The greater part of the philosophers who held the existence of a plastic nature, considered it not as an *agent* in the strict sense of the word, but merely as an instrument in the hand of the Deity; though even among them there were some who held no superior power, and were, of course, as gross atheists as Democritus himself. Such was STRATO of Lampascus, who was originally of the peripatetic school, over which he presided many years, with great reputation. He was the first and chief assertor of what has been termed *Hylæic atheism*; a system which admits of no power superior to a certain *natural* or *plastic life*, *essential*, *ingenerable*, and *incorruptible*, inherent in matter, but without sense and consciousness. That such was his doctrine we learn from Cicero. (*De Nat. Deor.* l. i. c. 13.) Cicero adds, however, that Strato, in admitting this plastic principle, differed widely from Democritus. That the rough and smooth, and hooked and crooked atoms of Democritus were, indeed, dreams and fancies, is a position which no sensible person will controvert; but surely Strato was himself as great a dreamer, when he made sensation and intelligence result from a certain plastic or spermatic life in matter, which is itself devoid of sense and consciousness. It is, indeed, inconceivable, to use the emphatic language of Cudworth, "how any one in his senses should admit such a monstrous paradox as this, that every atom of dust has in itself as much wisdom as the greatest politician and most profound

profound philosopher, and yet is neither conscious nor intelligent!" Strato likewise, though he attributed a certain kind of life to matter, by no means allowed of one common life as ruling over the whole material universe. He supposed the several parts of matter to have so many several plastic lives of their own, and seems to have attributed something to chance in the production and preservation of the mundane system. In denying the existence of a God perpetually directing his plastic principle, and in supposing as many of these principles as there are atoms of matter, Strato deviated far from the doctrine of Aristotle. The great founder of the peripatetic school, as well as his apostate disciple, taught, that mundane things are not effected by fortuitous mechanism, but by such a nature as acts regularly and artificially to ends; yet he never considers this nature as the highest principle, or supreme *Numen*, but as subordinate to a perfect mind or intellect; and he expressly affirms, that "mind, together with nature, formed or fashioned this universe." He evidently considers mind as the principal and intelligent agent, and nature as the subservient and executive instrument. Indeed, we are strongly inclined to adopt the opinion of the learned Mosheim, who thinks that by nature Aristotle meant nothing more than that *breathing vapour, or animal heat*, to which he attributes immortality, and of which he expressly says that all things are full. (De *Gener. Anim.* l. iii. c. ii.) Be this as it may, he always joins God and nature together, and affirms that they do nothing in vain. The same doctrine was taught before him by Plato, who affirms that "nature, together with reason, and according to it, orders all things." Plato, however, attributed intelligence to the principle by which he supposed the world to be animated, as Chalcidius, commenting on the *Timæus*, affirms: Apuleius, too, assures us of the same thing in *Dogmat. Platon.* This doctrine of Plato has been adopted by many moderns of eminence both for genius and for learning. The celebrated Berkeley Bp. of Cloyne, after giving the view of Plato's *anima mundi*, which the reader will find in our article *MOTION*, § 6, recommends the study of his philosophy in the strongest terms. (See his *Siris*, N° 338.) Cudworth and Lord Monboddo are likewise strenuous advocates for the Aristotelian doctrine of a plastic nature diffused through the material world; and a notion very similar has lately occurred to a writer who does not appear to have borrowed it either from the *Lycæum* or the *Academy*. This is Mr Young, of whose *active substance*, and its agency in moving bodies, some account has been given elsewhere. See *MOTION*, § 7. As a mere unconscious agent, *immaterial*, and, as he calls it, *immaterial*, it bears a striking resemblance to the *plastic nature* or *vegetable life* of Cudworth: but the author holds it to be not only the principle of motion, but also the *basis* or *substratum* of matter itself; in the production of which, by certain motions, it may be said to be more strictly *plastic* than the *hylarchic* principle, or *vis genitrix*, of any other philosopher with whose writings we have any acquaintance. Though this opinion be singular, yet as one great part of the utility of such works as ours consists in their serving as indexes

to science, we shall lay before our readers a short abstract of his reasonings, and shall offer some remarks upon them as we proceed. The author, in a chapter entitled *Analysis of Matter in general*, treats of primary and secondary qualities, and adheres too closely to the language of Locke, when he says, that "the nature of bodies signifies the aggregate of all those *ideas* with which they furnish us, and by which they are made known." This sentence is inaccurately expressed. An aggregate of *ideas* may be occasioned by the impulse of bodies on the organs of sense, but the effect of impulse cannot be that which impels. Having justly observed, that we know nothing directly of bodies but their qualities, he proceeds to investigate the nature of solidity. "Solidity, (he says), is the quality of body which principally requires our notice. It is that which fills extension, and which resists other solids, occupying the place which it occupies; thus making extension and figure real, and different from mere space and vacuity. If the secondary qualities of bodies, or their powers variously to affect our senses, depend on their primary qualities, it is chiefly on this of solidity; which is therefore the most important of the primary qualities, and that in which the essence of body is by some conceived to consist. This idea of solidity has been judged to be incapable of any analysis; but it appears evident to me, that the idea of solidity may be resolved into another idea, which is that of the power of resisting within the extension of body. Hence it becomes unnecessary, and even inadmissible, to suppose that solidity in the body is at all a pattern or archetype of our sensation." That solidity in the body, and we know nothing of solidity any where else, is no pattern of any sensation of ours, is indeed most true; (See *METAPHYSICS*, *Scil.* III. § 16—18.): but to reconcile this with what our author asserts, that "solidity is no more in bodies than colours and flavours are, and that it is equally with them a sensation and an idea," would be a task to which our ingenuity is by no means equal. He affirms, indeed, that solidity, as it is said to be in bodies, is utterly incomprehensible; that we can perfectly comprehend it as a sensation in ourselves; but that in bodies nothing more is required than a power of active resistance, to make upon our senses those impressions from which we infer the reality of primary and secondary qualities. This power of resistance, whether it ought to be called active or passive, we apprehend to be that which all other philosophers have meant by the word *solidity*; and though Locke, who uses the words *idea* and *notion* indiscriminately, often talks of the *idea* of solidity, we believe our author to be the first of human beings who has thought of treating *solidity* as a sensation in the mind. Though it is wrong to innovate in language, when writing on subjects which require much attention, we however, shall follow our author in his endeavours to ascertain what this power of resistance is, which is commonly known by the name of *solidity*. All power he justly holds to be active; and having attempted to prove that it is by an inward power, and not by its *inertia*, that one body prevents another from occupying the same place with itself, he naturally enough infers matter to be essentially active

five. **SOLIDITY** alone of the primary qualities being positive, and peculiar to bodies, and our author having resolved this into **ACTION** or **POWER**, it follows, by his analysis, that the **ESSENCE** of **BODY** is reduced to power likewise. But, as he properly observes, power is an idea of reflection, not acquired by the senses, but suggested by thought. Hence our knowledge of real existence in body must be such as is suggested to us by our thoughts exercised about our sensations. "We are capable of acting and producing changes in appearance; and this faculty, which we experience to exist in ourselves, we call power. We are conscious of the exertion of our own power; and therefore, when we see **ACTION** or **CHANGE** happen without any exertion of ours, we refer this to other powers without us, and necessarily conclude the **POWER** to exist where the change begins or the action is exerted. This power, then, referred to bodies, must exist in them, or it can exist nowhere." Our author next analyzes **ATOMS**, or the primary particles of matter, and strenuously opposes their impenetrability. He allows that there are atoms of matter not divisible by any known force; but as these, however small, must still be conceived as having extension, each of them must be composed of parts held together by the same power which binds together many atoms in the same body; and as the ideal analysis may be carried on *ad infinitum*, the only positive idea which is suggested by atoms, or the parts of atoms, is the idea of a resisting power. That this power, which constitutes the solidity of bodies, may not be absolutely impenetrable, he attempts to prove, by showing that resistance does in fact take place in cases where impenetrability and even solidity are not supposed by any man. "Let us endeavour (says he) to bring together two like poles of a magnet, and we shall experience resistance to their approximation. Why, then, may not a piece of iron, which between our fingers resists their coming together, resist by an efficacy perfectly similar, though more strongly exerted? If magnetism were to act upon our bodies as upon iron, we should feel it; or were magnets endowed with sensation, they would feel that which resists their nearer approach. The resisting extension between the two magnets is permeable to all the rays of light, and reflecting none is therefore unseen. Thus we see that an action, in which no supposition of solidity or impenetrability is involved, may be conceived to assume all the qualities of matter, by only supposing a familiar effect extended in its operation." This reasoning is ingenious, but it does not approach so near to demonstration as the author supposes. If magnets operate by a fluid issuing from them, (see **MAGNETISM**, *Sec.* III.), those who held the solidity or impenetrability of matter will maintain, that each atom of the magnetic fluid is solid and impenetrable. That we do not see nor feel those atoms, will be considered as no argument that they do not exist; for we do not see, nor in a close room feel, the atoms of the surrounding atmosphere; which yet Mr Young will acknowledge to have a real existence, and to be capable of operating upon our senses of hear-

and smelling. Let us, however, suppose, that by this reasoning he has established the non-existence of every thing in the primary atoms of matter but active powers of resistance; and let us see how he conceives the actions of these powers to constitute what gives us the notion of inert and solid body; for that we have such a notion cannot be denied. To **ACT** he allows to be an attribute, and justly observes, that we cannot conceive an attribute to exist without a substance. "But (says he) we have traced all phenomena to action as to a generic idea, comprehending under it all forms of matter and motion as species of that genus. By this analysis, that complex idea we have usually denominated *matter*, and considered as the substance or substratum to which motion appertained as an attribute, is found to change its character, and to be itself an attribute of a substance essentially active, of which one modification of motion produces matter, and another generates motion." The action of this substance Mr Young determines to be motion, (see **MOTION** § 7.); and he proceeds to inquire by what kind of motion it produces matter, or inert and resisting atoms. "Whatever portion of the **ACTIVE SUBSTANCE** is given to form an atom, the following things are necessary to be united in such portion of active substance: *1st*, It must in some respect continually move; for otherwise it would lose its nature, and cease to be active. *2^{dly}*, It must also in some other respect be at rest, for otherwise it could not form an inactive atom: *3^{dly}*, It must preserve unity within itself." The author's proof of the first of these positions we have given elsewhere. The *2^d* he holds to be self-evident; and the third he thinks established by the following reasoning: "Solidity is the result of those actions among the parts of any whole, whereby the unity of the whole is preserved within itself. Several uncohering things may be united by an external bond: this does not constitute these one solid; it may be one bundle: but if several things cohere, and have a unity preserved within themselves, they become one solid. An atom is the least and most simple solid." After some additional arguments, he concludes, that "since any portion of active substances does, by revolving about a centre, become an united, resisting, and quiescent whole, the smallest portions of the **ACTIVE SUBSTANCE** which have such motions will become *atoms* or make the smallest portions of matter." He next explains what at first he confesses may have appeared a paradox, "how the **ACTIVE SUBSTANCE**, retaining its own nature and essential properties, continuing *immaterial*, *unsolid*, and *active*, puts on at the same time the form of matter, and becomes *material*, *solid*, and *inert*. A sphere of revolving active substance, as it revolves continually about a centre, and as parts of the substance, are considered as successively passing through every point in the orbit; considered thus in its parts, and in its motions; it is **ACTIVE SUBSTANCE**, immaterial, and unsolid; but the whole sphere, considered unitically, collectively, and as quiescent, is in this point of view a solid atom, material, and inert." Such is the active substance of Mr Young, and such his theory of

of the formation of matter. That he has not copied from the ancients, every learned reader will acknowledge; if his theory be well founded, he has discovered a middle substance between *mind* and *matter*, more properly *physic*, than Aristotle and Plato, Cudworth or Berkeley, ever conceived. But his theory labours under insuperable objections. That there *may* be in the universe a substance essentially active, and at the same time not intelligent, is a proposition which we by no means controvert. Various phenomena, both in vegetable and animal life, lead us to suspect that there is such a substance; but it does not follow that we are to adopt our author's doctrine respecting the formation of matter. He conceives his proof, indeed, not to fall short of demonstration; and if any one refuse it, he thinks it will be necessary for him to show, either that the explanation offered is not sufficient, or that some other explanation will serve equally well." To show that the explanation offered is not sufficient, will not be a very arduous task; but we will not attempt another explanation, because we believe, that, of the formation of matter, no other account can be given, than that which resolves it into the *fact* of the Creator. That it cannot be formed by the motion of an immaterial substance in the manner which our author has described, is a truth so evident as not to admit of proof; for if motion be, as he defines it, a change of place, every thing that is moved must have the quality of extension. But all the parts of this active substance which are given to form an atom, move round a centre, and are expressly said to occupy successively different *places* in the orbit of rotation. Every one of these parts, therefore, is an extended being; and since, according to our author, solidity is nothing but an *active power of resistance*, and the parts of this active substance, in their rotation round their centre, *act upon* and *resist* whatever interferes to oppose their activity, it follows that each of these parts is likewise a *solid being*. But, in the opinion of Mr Young himself, and of all mankind, whatever is extended and solid is material. This theory, therefore, exhibits a process in which atoms are formed of a substance, which, though it is said to be *active, immaterial, and un-solid*, appears, when narrowly inspected, to be nothing else than a collection of these very atoms of which the author pretends to explain the formation.

PLASTOW, or **PLAISTOW**, a township of New Hampshire, in Rockingham county, separated from Haverhill in Massachusetts, by the S. State Lane. It contained 511 citizens in 1793, and lies 28 miles SW. of Portsmouth.

* **PLASTRON**. *n. f.* [French.] A piece of leather stuffed, which fencers use, when they teach their scholars, in order to receive the pushes made at them. *Trevoise*.—

Flourish the sword, and at the *plastron* push.

Dryden.

* **PLAT**. *n. f.* [more properly *plot*; *plot*, Sax.] A small piece of ground.—

This flow'ry *plat*, the sweet recess of Eve.

Milton.

On a *plat* of rising ground,
I hear the far off curfew sound.

Milton.

—It passes through banks of violets and *plate* of willow of its own producing. *SpeBator*.

* To **PLAT**. *v. a.* [from *platit*.] To weave; to make by texture.—I have seen nests of an Indian bird curiously interwoven and *platted* together. *Roy*.—I never found so much benefit from any expedient, as from a ring, in which my mistress's hair is *platted* in a kind of the lover's knot. *Addison*.

(1.) **PLATA**, or **LA PLATA**, a very large river of S. America, absurdly styled, as well as the country through which it runs, by many English writers *Rio-de-la-Plata*, as if these words *Rio-de-la*, (i. e. *River of the*) either could not be translated into English, or formed a part of the name of the river or country. This river was first discovered by John Dias de Salis or Solis, a Spanish navigator, who, in 1515, sailed up the Plata as far as an island, which lies in 34° 40' Lat. S. but who, imprudently venturing to go ashore with 10 men among some of the native Indians, they were all murdered by the savages. From him the river was at first named *Solis*; but afterwards Sebastian Cabot, having procured a great deal of gold and silver *plate* from the adjacent inhabitants, and considering these metals as the produce of the country, though in fact they came from Peru, named both the country and river *Plata*. Mr Cruttwell, however, says the banks of the Plata abound with the precious metals. This river is formed by the junction of three large rivers, in Lat. 27. 45. S. viz. the Paraguay, the Uruguay, and the Parana. (See **PARAGUAY**, N° 2.) It is afterwards greatly increased by the waters of many other large rivers, whereby it often overflows its banks for several leagues, like the Nile, and fertilizes the adjacent fields. Its waters are clear and sweet, and abound with such variety and plenty of fish, that the people take them with their hands without nets. In some places also its waters petrify wood. It crosses the country of Paraguay, and runs 600 miles, mostly S. and SE. from its rise by the junction of the 3 rivers to its mouth; where it is 210 miles broad, and falls into the sea with such force and rapidity, that the water continues fresh for several leagues from its mouth. It is interspersed with many islands, and is navigable by the largest ships. It falls into the South Sea in Lat. 33° S.

(2.) **PLATA**, an extensive and fertile country of S. America on the banks of the Plata, in an excellent climate, called also *Paraguay*. See **PARAGUAY**, N° 1. Lat. from 32° to 37° S.

(3.) **PLATA**, a province in the above territory, on the SW. bank of the Plata. The climate is healthy. The winter is in May, June, and July, when the nights are indeed very cold, but the days moderately warm; the frost is neither violent nor lasting, and the snows are very inconsiderable. The country consists mostly of plains of a vast extent, and exceeding rich soil, producing all sorts of European and American fruits, wheat, maize, cotton, sugar, honey, &c. and abounding with such excellent pastures, that the beasts brought hither from Spain are multiplied to such a degree, that they are all in common, no man claiming any property in them, but every man takes what he hath occasion for. The number of black cat-

tle

is so prodigious, that many thousands of them are killed merely for their hides, every time the ships go for Spain, and their carcasses left to be devoured by wild beasts and birds of prey, which are also very numerous. Horses are no less numerous, and in common like the other cattle; and of those that are already broke, one may buy some of the best, and of the true Spanish breed, for a dollar per head. Wild fowls also are in great plenty here; partridges are more numerous, and as large and tame as our hens. Their wheat makes the finest and whitest of bread; and, in a word, the natives want for nothing but salt and fuel. The former the Spaniards have brought to them from other parts; and the latter they supply themselves with, by planting vast numbers of almond, peach, and other trees, which require no other trouble than putting the kernels into the ground, and by the next year they begin to bear fruit. The return of European commodities is so great here, that in ordinary two penny knife sells for a crown, and a gun of the value of 10 or 15 shillings 20 or 30 crowns, and so of the rest.

(4.) PLATA, a province and archbishop's see of South America, in Buenos Ayres, about 600 miles long from N. to S. and 300 broad, lying on both sides of the Plata. It is an extensive country and is divided into 14 districts or jurisdictions. The climate is moderate and healthy, being chiefly in the south temperate zone. PLATA (Nº 5.) is the capital.

(5.) PLATA, a city of Buenos Ayres, and an archbishop's see, capital of the above province; built in 1539 by Captain Peter Anzures, by order of Gonzales Pizarro. It stands in a plain, environed by eminences, which defend it from all winds. The climate is mild; only in winter there are thunder storms and great rains. The greatest want is scarcity of water. The number of inhabitants, Spaniards, and native Indians, is about 14,000. The cathedral is large, well built, and elegantly adorned. It has also an university, and is governed by an alcaid. Lon. 49. 0. E. Ferro. Lat. 19. 30. S.

(6.) PLATA, a city of Peru, in the province of Chacabamba, on the Chimbo, 500 miles SE. of Cusco. Lon. 63. 40. W. Lat. 19. 16. S.

(7.) PLATA, an island on the coast of Quito in Peru; 5 miles long and 4 broad. Lat. 1. 10. S.

(1.) PLATÆA, an island in the Mediterranean, on the coast of Africa, which belonged to the Cyrenæans. Herodot. iv. c. 157.

(2.) PLATÆA, or } an ancient and strong town
PLATÆÆ, } of Boeotia, at the foot of mount Cithæron, on the borders of Megaris and Attica, between Mount Cithæron and Thebes; famous for a battle fought between Mardonius the Persian general, and the united Spartans and Athenians, under Pausanias and Aristides, wherein the former were defeated with great slaughter. The Persian army consisted of 300,000 men, of whom scarcely 3000 escaped. The Grecian army lost only 91 Spartans, 52 Athenians, and 16 Tegeans. The plunder of the Persian camp was immense. This decisive victory, which from that period secured the liberties of Greece against the power of the Persians, was fought on the 22d September A. A. C. 479, the same day that the
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Greeks obtained another important victory at Mycale. (See MYCALE, Nº 1.) The Greeks, in memory of it, built a temple to Jupiter Eleutherius, and instituted the games called ELEUTHERIA. PLATÆA was taken by the Thebans, after a famous siege in the beginning of the Peloponnesian war; and afterwards destroyed by the Spartans, A. A. C. 427. It was rebuilt by Alexander the Great; but is now in ruins. Herodot. Pauf. Plat. &c.

PLATÆANS, the people of PLATÆA. They were greatly attached to the Athenians, and sent them 1000 men, when Greece was invaded by Darius's general Datis.

PLATALEA, the SPOONBILL, in ornithology, a genus belonging to the order of grallæ. The beak is plain, and dilates towards the point into an orbicular form; the feet have three toes, and are half palmated. See Plate CCLXXIV. There are three species distinguished by their colour; and three varieties:

1. PLATALEA AJAJA, the *roseate spoonbill*, is but a little less than the white, Nº 2. The bill is marked all round with a furrow parallel to the edge, and is of a greyish white colour, so transparent as to show the ramification of the blood-vessels belonging to it; the forehead is of a whitish colour between the bill and eyes and throat; the plumage is a fine rose-colour, deepest on the wings; the legs are grey, the claws blackish, and the toes have membranes, as in the next species. The variety of this species is entirely of a beautiful red colour, having a collar of black at the lower part of the neck; the irides are red. Mr Latham imagines it is the roseate in full plumage. It is said to be of a blackish chestnut the first year; becomes rose-coloured the second, and of a deep scarlet the third. It lives on small fish.

2. PLATALEA LEUCORODIA, the *white spoonbill*, is about the size of a heron, but somewhat shorter in the neck and legs. The bill is more than half a foot long, and, like that of the rest of the genus, is shaped like a spoon; the colour of the bill is very various, being in some birds black, in others brown, and sometimes spotted; from the base to two thirds of its length several indentations cross it, the rising parts of which are of a dark colour; the tongue is short and heart-shaped, the irides are grey, the skin of the lore round the eyes and of the throat is bare and black, the plumage is entirely white, though in some specimens the quills were tipped with black, the legs are generally either black or of a greyish brown colour; between the toes there is a membrane connected to the outer one as far as the second, and to the inner as far as the first joint. "This bird (says Mr Latham) is found in various parts of the old continent, and from the Ferro isles near Iceland to the Cape of Good Hope. It frequents the neighbourhood of the sea; and has been met with on the coasts of France; at Sevenhuys, near Leyden, once in great plenty, annually breeding in a wood there. The nest is placed on high trees, near the sea-side. The female lays three or four white eggs, powdered with a few pale red spots, and of the size of those of an hen. They are very noisy during breeding time, like our rooks; are seldom found high up the rivers, chiefly frequenting the mouths of them. Their food is fish, which they
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often take from other birds, in the manner of the bald eagle; also mussels and other shell-fish, being found in greatest numbers where these are plenty; and they will also devour frogs and snakes, and even grass and weeds, which grow in the water, as well as the roots of reeds. They are migratory, retiring to the warmer parts as the winter approaches, and are rarely seen in England. Their flesh is said to have the flavour of a goose, and is eaten, by some, and the young birds have been thought good food. By many authors they are called *pelicans*." The two varieties of this species are equal in size to the roseate species. The bill of the first is reddish; the plumage mostly white; the feathers of the wings partly white and partly black, and the legs reddish. The plumage of the other is entirely white, not excepting even the quills. It has a crest of feathers whose webs are very loose, and separated from one another; the bill is of a rufous grey colour, having red edges, and the legs are of a dull pale red. They both inhabit the *Philippine Islands*.

3. *PLATALEA PYGMAE*, the *dwarf spoonbill*, is about the size of a sparrow. The bill is black, longer than the head, flat at the end, and nearly of a rhomboidal form; the angles and top of the upper mandible are white, the tongue is smooth, the body is brown above and white beneath, the quills have white shafts, the tail is rounded, short, and of a brownish white colour; the feet have four toes, are cloven, and the claws are pointed. It inhabits Surinam and Guiana.

PLATAMONE, a town of European Turkey, in Moldavia, at the mouth of the Jenicoro, 44 miles SSE. of Edessa.

(1.) * *PLATANE*. *n. f.* [*platane*, Fr. *platanus*, Latin.] The plane tree.—

The *platane* round,

The carver holm, the mapple seldom inward found. *Spenser.*

I espied thee, fair and tall,

Under a *platane*.

Milton.

(2.) *PLATANE*. See *PLATANUS*.

PLATANI, a river of Sicily, which rises near Castro Nuovo, and runs into the sea 10 miles south of Sacco.

PLATANIVS, a river of Bæotia. *Paus.*

PLATANUS, the *PLANE-TREE*; a genus of the polyandria order, belonging to the monœcia class of plants, and, in the natural method ranking in the 50th order, *Amentaceæ*. There are two species;

1. *PLATANUS OCCIDENTALIS*, *occidental*, or *western plane tree*, rises with a straight smooth stem, to a great height, branching widely round. It has lobated leaves, 7 or 8 inches long, and from 9 or 10 to 12 or 14 broad, divided into three large lobes, with very small flowers, collected into round heads, succeeded by round rough balls of seed. It is a native of Virginia and other parts of North America; where it attains an enormous size, and is remarkable for having its stem all of an equal girth for a considerable length; some trees being 8 or 9 yards in circumference, which, when felled, afforded 20 loads of wood.

2. *PLATANUS ORIENTALIS*, *oriental* or *eastern plane tree*, rises with a very straight smooth branching stem to a great height. It has palmated leaves, 6 or 8 inches long and as broad, divided into

five large segments, having the side ones cut into two smaller, green above, and pale underneath; and long pendulous pedunculi, each sustaining several round heads of close-fitting very small flowers; succeeded by numerous downy seeds, collected into round, rough, hard balls. It is a native of Asia and many parts of the east, and grows in great plenty in the Levant. The varieties of these two species are the *Spanish* or *middle plane tree*, having remarkably large leaves of 3 or 5 narrower segments; and the *muple-leaved plane tree*, having smaller leaves, somewhat lobated into 5 segments, resembling the maple tree leaf.—All these elegant trees are of a hardy temperature, so as to prosper here in any common soil and exposure in our open plantations, &c. and are some of the most desirable trees of the deciduous tribe. They were in singular esteem among the ancients of the east, for their extraordinary beauty and the delightful shade they afforded by their noble foliage. The leaves commonly expand in May, and fall off early in autumn; and the flowers appear in spring, a little before the leaves, being succeeded by seeds, which in fine seasons frequently ripen here in September. These fine trees are singularly fitted for all ornamental plantations. Their straight growth, regular branching heads, and the lofty stature they attain, together with the extraordinary breadth of their luxuriant leaves, render them extremely desirable furniture to adorn avenues, lawns, parks, and woods; some disposed in ranges, some as single standards, others in clumps, some in groves, &c. They are most excellent for shade; for no tree is better calculated to defend us from the heat in summer, by its noble spreading foliage, and to admit the sun's rays more freely in winter, on account of the distance of its branches, which is always in proportion to the size of the leaves. They may also be employed in the collection of forest trees, in woods, to grow up to timber, in which case they will also prove advantageous in time. In short, they claim the attention of every one concerned in plantations of every kind. The propagation of these trees is by seed, layers, and cuttings. The seeds frequently ripen in these parts, and are also procured from other countries, and may be obtained of the nurserymen or seedsmen. The best season for sowing them is autumn, if they can be then procured. Choose a somewhat shady moist soil; and having dug the ground, and raked it fine, form it into four feet wide beds, and either scatter the seeds evenly on the surface, and rake them in, or previously with the back of a rake turn the earth off the surface near half an inch deep into the alleys; then sow the seed, and directly, with the rake turned the proper way, draw the earth evenly over the seeds, and trim the surface smooth; many of the plants will rise in spring, and probably may not till the spring following. When they are one or two years old plant them out in nursery rows, two or three feet asunder, and about half that distance in the lines; to remain till of a proper size for final transplantation. The method of propagation by layers is commonly practised in the nurseries, in default of seed, and by which they most readily grow; for which purpose, some stout plants for stools must be planted, which in a year after must be headed down near the bottom,

that

that they may throw out many shoots near the ground, convenient for laying; which, in the autumn after they are produced, lay by for slitting, and by autumn after, they will be well rooted, and form plants two or three feet high, so may be separated, and planted in nursery rows like the seedlings. All the forts will take tolerably by cutting off the strong young shoots; but the *platanus occidentalis* more freely than the oriental kind. Autumn is the best season; as soon as the leaf falls, choose strong young shoots, and plant them in a moist soil; many of them will grow, and make tolerable plants by next autumn. To continue the distinction of the varieties more effectually, they should be propagated either by layers or cuttings; for, when raised from seed, those of the respective species generally vary.

(1.) **PLATBAND.** *n. f.* in gardening, a border or bed of flowers, along a wall, or the side of a parterre, frequently edged with box, &c.

(2.) **PLATEBAND** of a door or window, is used for the lintel, where that is made square, or not much marked.

(r.) * **PLATE.** *n. f.* [*plate*, Dutch; *plague*, Fr.]
1. A piece of metal beat out into breadth.—

Crowns and coronets, realms and islands were
As plates dropt from his pocket. *Shak.*

—Make a plate, and burnish it as they do iron.
Bacon.—The censers of rebellious Corah, &c. were, by God's mandate, made plates for the covering of the holy altar. *White.*—A leaden bullet shot from one of these guns, the space of 20 paces, will be beaten into a thin plate. *Wilkins.*—The censers of these wretches were appointed to be beaten into broad plates, and fastened upon the altar. *South.*—
Eternal deities!

Who write whatever time shall bring to pass
With pens of adamant on plates of brass. *Dryd.*

2. Armour of plates.—

With their force they pierced both plate and mail. *Spenser.*

3. [*Plata*, Spanish.] Wrought silver.—

And leaving plate,

Do drink in stone of higher rate. *Ben Jonson.*

—The Turks entered into the trenches so far, that they carried away the plate. *Knolles's History.*—

A table stood

Yet well wrought plate strove to conceal the wood. *Cowley.*

They, that but now for honour and for plate
Made the sea blush with blood, resign their hate. *Waller.*

At your desert bright pewter comes too late,
When your first course was all served up in plate. *King.*

What nature wants has an intrinsic weight;
All more is but the fashion of the plate. *Young.*

4. [*Plat*, Fr. *piatta*, Italian.] A small shallow vessel of metal on which meat is eaten.—

Alcianus this observed, and, smiling, said,
See, we devour the plates on which we fed. *Dryd.*

(2.) **PLATE** is likewise used by sportsmen to express the reward given to the best horse at races; which was formerly often a piece of elegant silver plate, as a tea-pot, tea kitchen, caudle cup or punch bowl; but is now almost universally converted into a purse. The winning a plate or purse is not the work of a few days to the owner of the

horse; but great care and preparation is to be made for it, if there is any great dependence on the success. A month is the least time that can be allowed to draw the horse's body clear, and to refine his wind to that degree of perfection that is attainable by art. See **RACE**.

(3.) **PLATE**, in geography, a town of Upper Saxony, in Pomerania, on the Rega; 17 miles ESE. of Cammin, and 22 S. of Colberg. Lon. 33. o. E. Ferro. Lat. 53. 49. N.

(4.) **PLATE**, a town of Hispaniola, or St Domingo, on the south side of the North Peninsula. Lon. 75. 40. W. of Paris. Lat. 10. 16. N.

(5.) **PLATE**, MONTE DE, a mountainous district near the centre of Hispaniola, towards the E.

(6.) **PLATE**, PORT DE, a sea-port on the north coast of Hispaniola, near a mountain; 66 miles west of Old Cape François. The environs abound with gold, silver, and copper, whence the name. Before the late horrors committed by the French and negroes, it had 2500 inhabitants and a handsome church.

* **To PLATE.** *v. a.* [from the noun.] 1. To cover with plates.—The doors are curiously cut through and plated. *Sandys.*—M. Lepidus's house had a marble door-case; afterwards they had gilded ones, or rather plated with gold. *Arbuthnot.* 2. To arm with plates.—

Plate lin with gold,
And the strong lance of justice hurtles breaks. *Shak.*

Marshal, ask yonder knight in arms,
Why plated in habiliments of war? *Shak.*

Old warriors turned
Their plated backs under his heel. *Milton.*

5. To beat into laminae or plates.—
The miser will his empty palace lend,
Set wide his doors, adorned with plated brass. *Dryden.*

—If a thinned or plated body, of an uneven thickness, which appears all over of one uniform colour, should be slit into threads of the same thickness with the plate, I see no reason why every thread should not keep its colour. *Newton.*

* **PLATEN.** *n. f.* Among printers, the flat part of the press, whereby the impression is made.

(1.) * **PLATFORM.** *n. f.* [*plat*, flat, Fr. and *form*.] 1. The sketch of any thing horizontally delineated; the ichnography.—When the workmen began to lay the platform at Chalcedon, eagles conveyed their lines to the other side of the freight. *Sandys's Journey.* 2. A place laid out after any model.—

Grove nods at grove, each alley has a brother,
And half the platform just reflects the other. *Pope.*

3. A level place before a fortification.—
Where was this?

—Upon the platform where we watch. *Shak.*
4. A scheme; a plan.—Their minds and affections were universally bent, even against all the orders and laws wherein this church is founded, conformable to the platform of Geneva. *Hooker.*—I have made a platform of a princely garden by precept. *Bacon's Essays.*—They who take in the entire platform, and see the chain which runs through the whole, will discern how these propositions flow from them. *Woodward.*

— M m m 2

(2.) **PLATFORM**

(2.) **PLATFORM**, in architecture, is a row of beams which support the timber-work of a roof, and lie on the top of a wall where the entablature ought to be raised. This term is also used for a kind of terrace, or broad smooth open walk, at the top of a building, from whence a fair prospect may be taken of the adjacent country. Hence an edifice is said to be covered with a platform, when it is flat at top, and has no ridge. Most of the oriental buildings were thus covered, as were all those of the ancients. It is astonishing, that the useless and inconvenient mode of the ridged roofs, which are so often attended with fatal accidents, should ever have become so general as they now are in Europe.

(3.) **PLATFORM**, in the military art, is an elevation of earth, on which cannon are placed to fire on the enemy; such are the mounts in the middle of curtains. On the ramparts there is always a platform, where the cannon are mounted. It is made by the heaping up of earth on the rampart, or by an arrangement of madriers, rising insensibly, for the cannon to roll on, either in a case-mate or on attack in the outworks. All practitioners are agreed, that no shot can be depended on, unless the piece can be placed on a solid platform; for if the platform shakes with the first impulse of the powder, the piece must likewise shake, which will alter its direction, and render the shot uncertain.

(4.) **PLATFORM**, or **ORLOP**, in a man of war, is a place on the lower deck, abaft the main mast, between it and the cockpit, and round about the main capstan, where provision is made for the wounded men in time of action.

* **PLATICK ASPECT**. In astrology, is a ray cast from one planet to another, not exactly, but within the orbit of its own light. *Bailey*.

(1.) **PLATINA**, Bartholomew Sacelli, or *Philip*, as others call him, a learned Italian historian, born in 1421, at Piedena, a village between Cremona and Mantua. He first embraced a military life, but afterwards devoted himself to literature. He went to Rome under Calixtus III. about 1456; was introduced to Cardinal Bessarion, obtained some benefices from Pius II. and was appointed apostolical abbreviator. Paul II. succeeding, abolished the offices of all the abbreviators. Platina complained to the Pope, and requested to be judged by the auditors of the Rota. Paul gave him a haughty repulse; Platina wrote to him, which Paul considered as an act of rebellion, and put him in prison, where he suffered great hardships for four months, when he was liberated, but forbid to leave Rome. After this he was again imprisoned with many others, on suspicion of a plot, and put to the rack. The plot being found imaginary, he was next accused of heresy. All this persecution he is said to have suffered for assuming the name of *Calimachus*. See **NAME**, § II. 2. Sixtus IV. succeeding Paul, in 1467, appointed Platina keeper of the Vatican library; in which station he lived very happily till 1481, when he died of the plague. He was author of several works, of which the most famous is his *History of the Popes*.

(2.) **PLATINA**, or **PLATINUM**. See **PLATINUM**.

(1.) **PLATING**, *part. n. f.* is the art of covering softer metals with a thin plate of silver either

for use or for ornament. It is said to have been invented by a spur-maker, not for show, but for real utility. Till then the more elegant spurs in common use were made of solid silver, and from the flexibility of that metal they were liable to be bent into inconvenient forms by the slightest accident. To remedy this defect, a workman at Birmingham contrived to make the branches of a pair of spurs hollow, and to fill that hollow with a slender rod of steel or iron. Finding this a great improvement, and being desirous to add cheapness to utility, he continued to make the hollow larger, and of course the iron thicker and thicker, till at last he discovered the means of coating an iron spur with silver, in such a manner as to make it equally elegant with those which were made wholly of that metal. The invention was quickly applied to other purposes, and to numberless utensils which were formerly made of brass or iron are now given the strength of these metals, and the elegance of silver, for a small additional expence. The silver plate is generally made to adhere to the baser metal by means of solder; which is of two kinds, the *soft* and the *hard*, or the *tin* and *silver* solders. The former of these consists of tin alone, the latter generally of three parts of silver and one of brass. When a buckle, for instance, is to be plated by means of the soft solder, the ring, before it is bent, is first tinned, and then the silver plate is gently hammered upon it, the hammer employed being always covered with a piece of cloth. The silver now forms, as it were, a mould to the ring, and whatever of it is not intended to be used is cut off. This mould is fastened to the ring of the buckle by two or three cramps of small iron wire; after which the buckle, with the plated side undermost, is laid upon a plate of iron sufficiently hot to melt the tin, but not the silver. The buckle is then covered with powdered resin, or anointed with turpentine; and, lest there should be a deficiency of tin, a small portion of rolled tin is likewise melted on it. The buckle is now taken off with tongs, and commonly laid on a bed of sand, where the plate and the ring, while the solder is yet in a state of fusion, are more closely compressed by a smart stroke with a block of wood. The buckle is afterwards bent and finished. Sometimes the melted tin is poured into the silver mould, which has been previously rubbed over with some flux. The buckle ring is then put among the melted tin, and the plating finished. This is called by the workmen *filling up*. When the hard solder is employed, the process is in many respects different. Before the plate is fitted to the iron or other metal, it is rubbed over with a solution of borax. Stripes of silver are placed along the joinings of the plate; and, instead of two or three cramps, as in the former case, the whole is wrapped round with small wire; the solder and joinings are again rubbed with the borax, and the whole put into a charcoal fire till the solder be in fusion. When taken out the wire is instantly removed, the plate is cleaned by the application of some acid, and afterwards made smooth by the strokes of a hammer.

(2.) **PLATING**, **FRENCH**, is when silver leaf is burnished on a piece of metal in a certain degree

of

of heat. When silver is dissolved in aquafortis, and precipitated upon another metal, the process is called **SILVERING**.

(3.) **PLATING, METAL**, is when a bar of silver and copper are taken of at least one equal side. The equal sides are made smooth, and the two bars fastened together by wire wrapped round them. These bars are then sweated in a charcoal fire; and after sweating, they adhere as closely together as if they were soldered. After this they are flattened into a plate between two rollers, when the copper appears on one side and the silver on the other. This sort of plate is named *plated metal*.

(1.) **PLATINUM**, or **PLATINA**, the most precious of all the metals excepting gold, and by some even reckoned superior to it. Dr Thomson, (in his *Syst. of Chem.* vol. 1. p. 91.) says, "Gold has been always in high estimation, on account of its scarcity, beauty, ductility, and indestructibility; but Platinum, though perhaps inferior in a few of these qualities, is certainly far superior in others." See **CHEMISTRY, Index; METALLURGY, Part II. Sect. II. and MINERALOGY, Part II. Chap. VII. Ord. II. Part III. Chap. IV. § II. and Chap. V. § 2.** "It was unknown, (adds the learned doctor) as a distinct metal before 1752. It has hitherto been found only in America, in Choco in Peru, and in the mine of Santa near Carthagena. It was unknown in Europe till Mr Wood brought some of it from Jamaica, in 1741. In 1748 it was noticed by Don Antonio De Ulloa, a Spanish mathematician;—several papers on it were published by Dr Watson in the 46th vol. of the *Philos. Trans.* These immediately attracted the attention of the most eminent chemists. In 1752, Mr Scheffer of Sweden published the first accurate examination of its properties. He proved it to be a new metal, approaching very much to the nature of gold, and therefore gave it the name of *aurum album*, *white gold*. Dr Lewis published a still more complete set of experiments on it, in 1754. Soon after dissertations were published on it by Margraf, Macquer and Beaume; Buffon, Tillet, and Morveau; Sickingen; Bergman; and more lately by Muffin, Puschkin, and Morveau," &c. "Platinum, when pure, is of a white colour like silver, but not so bright. To this colour (the doctor adds in a note) it owes its name. *Plata* in Spanish is *silver*, and *platina*, *little silver*, was the name first given to the metal. Bergman changed it into *Platinum*, that the Latin names of all the metals might have the same termination and gender. It had been, however, called *platinum* by Linnæus long before." "It has no taste nor smell. Its hardness is 8. Its specific gravity, after being hammered, is 23'000; so that it is by far the heaviest body known. It is exceedingly ductile and malleable; it may be hammered out into very thin plates, and drawn into wires not exceeding one 1940th of an inch in diameter. In these properties it is probably inferior to gold, but it seems to surpass all the other metals. Its tenacity is such, that a wire of platinum $\frac{1}{10}$ inch in diameter is capable of supporting a weight of 497lb. without breaking. It is the most infusible of all the metals, and cannot be melted, in any quantity at least, by the strongest artificial heat, which can be produced. Mac-

quer and Beaume melted small particles of it by a blow-pipe, and Lavoisier by exposing them on red hot charcoal to a stream of oxygen gas. It may, indeed, be melted without difficulty when combined or mixed with other bodies, but then it is not in a state of purity. Pieces of platinum, when heated to whiteness, may be welded together by hammering, in the same manner as hot iron. This metal is not in the smallest degree altered by the action of air or water."

(2.) **PLATINUM, ALLOY OF.** "When gold and platinum are exposed to a strong heat, they combine, and form an *alloy* of gold and platinum. If the platinum exceed one 17th of the gold, the colour of the alloy is much paler than gold; but if it be under one 17th, the colour of the gold is not sensibly altered. Neither is there any alteration in the ductility of the gold."

(3.) **PLATINUM, OXIDE OF.** "Platinum (says Dr Thomson) cannot be combined with oxygen, and converted into an oxide by the strongest artificial heat to which it has been possible to expose it. Platinum, indeed, in the state in which it is brought from America, may be partially oxydated by exposure to a violent heat, as numerous experiments have proved; but in that state it is not pure, but combined with a quantity of iron. It cannot be doubted, however, that, if we could subject it to a sufficient heat, platinum would burn and be oxydated like other metals; For when Van Marum exposed a wire of platinum to the action of his powerful electrical machine, it burnt with a faint white flame, and was dissipated into a species of dust, which proved to be the *oxide of platinum*. This metal may be oxydated in any quantity, by boiling it in 16 times its weight of nitro-muriatic acid. The acid dissolves it, and assumes first a yellow, and afterwards a deep red, or rather brown colour. On the addition of lime to the solution, a yellow powder falls to the bottom. This powder is the *oxide of platinum*. Its properties have not been examined with sufficient accuracy. It seems to contain but a small proportion of oxygen; probably not more than 0'07. This oxide may be decomposed, and the oxygen driven off, by exposing it to a violent heat."

(4.) **PLATINUM, PHOSPHURET OF.** See **PHOSPHURET, N° 13.**

(5.) **PLATINUM, QUANTITIES OF, FOUND NATIVE.** In the *Physical Journal* for Nov. 1785, we are told, that a native piece of platina was found nearly of a square figure, and almost as large as a pigeon's egg, which was deposited in the Royal Society of Biscay. M. de Buffon says, that "a person of credit had assured him that platina is sometimes found in large masses; and that he had seen a lump of it weighing no less than 20lb, which had not been melted, but taken in that state out of the mine." As to the small particles, they are of a whiter colour than iron, with a smooth surface. Their figure is generally of an oblong form, very flat, rounded in the edge, and has been ascribed to the hammering of the mills in which the gold is amalgamated. The heterogeneous substances with which the platina is generally mixed are particles of gold, grains of quartz or crystal, some sand of a brownish hue, and some dust of a dark colour obedient to the magnet, and which

seem,

seems to be fragments of other irregular dark-coloured particles, which resemble pieces of emery or load-stone. Dr Ingenhousz, however, says, that every particle, even of some fine platina which he examined, obeyed the magnet more or less, excepting some that were transparent and stony; and that these were all magnets in themselves, or that each of these particles had two poles, which he could change at pleasure by magnetic balls. In about 72 lb. weight of platina which was brought from Spanish America, M. Magellan found not only a large quantity of ferruginous sand, but many pieces of vegetable stalks, a number of seeds, and some very small red crystals like rubies. These crystals being sent to M. Achard of Berlin, he tried them as far as their minuteness and small quantity would permit, and at last concluded that they really were rubies!

(6.) PLATINUM, VARIOUS DISCOVERIES, MANUFACTURES, AND USES OF. Dr Lewis found that copper was much improved by alloying it with platina in certain proportions; and that equal parts of platina and brass formed a compound not subject to tarnish, and which might be employed with great advantage for the speculums of telescopes. Besides alloying it with the different metals, it was an object equally interesting to the chemists and society, that platina should be obtained pure and unmixed; and that means should be contrived to render it fusible, malleable, and ductile. After a vast variety of experiments by the most eminent chemists in Europe, it was found that the most effectual and advantageous method of separating platina from gold was founded on a property which gold has, and not platina, of being capable of precipitation from aqua regia by martial vitriol; and upon a property which platina has, and not gold, of being capable of precipitation from aqua regia by sal ammoniac. When therefore we would discover if gold be alloyed with platina, let it be dissolved in aqua regia; and to this solution, which will contain both metals, let some sal ammoniac dissolved in water be added; upon which the platina will be precipitated in form of a brick-coloured sediment. If, on the other hand, we would know if platina contain any gold, let this platina be dissolved in aqua regia, and to the solution add a solution of martial vitriol in water; upon which the liquor will become turbid, and the gold will form a precipitate which may be easily separated by decanting and filtering the liquor. This property which platina possesses of being precipitated by martial vitriol was first discovered by M. Scheffer. With respect to the iron contained among the platina, M. de Buffon separated, by means of a magnet, six parts out of seven of a parcel of platina. He distinguished two different matters in platina; of which one was black, friable, and attractable by magnets; and the other consisted of larger grains, was of a livid white or yellowish colour, much less attractable, and was extensible. Between these two different matters were many intermediate particles, some partaking more of the former, and some of the latter. But the most important discovery concerning the separation of platina from other metals was a method of melting it, by which it became a perfect metal, mal-

leable, and denser than gold. It was in 1773 and 1774 that M. de Lifle effected this, by dissolving crude platina in aqua regia, precipitating it from the acid menstruum by sal ammoniac, and by fusing this precipitate, without addition, in a double crucible, exposed to the intense heat of a forge-fire excited by double bellows. M. Morveau repeated the experiment, and found that he could melt the precipitate with several fluxes; he found likewise that by means of white glass, borax, and charcoal, he could melt even crude platina, and could alloy together platina and steel in various proportions. M. de Sickengen was the inventor of another method: he dissolved his platina in aqua regia, and precipitated the iron by the prussiate of potash. In evaporating this liquor he obtained small octahedral crystals of the colour of rubies; which, being exposed to a strong heat, yielded a metal which bore easily the stroke of the hammer, which could be readily drawn into wire, and was extremely malleable. In attempting to refine platina by the dry way, cupellation was a method to which the chemists early had recourse; but, notwithstanding their utmost endeavours, it has not been attended with all the success which could have been wished. Mess. Macquer and Beaumé kept the matter exposed to a violent fire, about 50 hours successively: and although their platina was tarnished and rough on its surface, it was internally white and shining, and easily separable from the cupel, and a little diminished in weight; a certain proof that no lead remained in it. This platina was also ductile, and capable of extension under the hammer. Cupellation, therefore, though not the best, is at least a certain method of applying platina to use, and of forming it into utensils. What has been thought a preferable method, is first to fuse the platina with arsenic, and afterwards dissipate this last metal by a strong heat: by these means Achard and Rochon were able to obtain a pure platina; of which the former made some small crucibles, and the latter, by alloying it with copper and tin, some large mirrors for reflecting telescopes. Jeanety of Paris has gone still farther: besides snuff-boxes, watch-chains, and a coffee-pot of platina prepared by this artist, the world has seen a lens weighing 6 lb., a ball weighing 9 lb., and two bars 19 feet long, and weighing no less than 11 lb. each. This gentleman has the merit of being the first who wrought this metal in the great way. The method he employed was far from being new; it had been suggested by Scheffer, by Willis, by Margraf, and was afterwards practised by Achard, Morveau, and many others, but who always prepared it in very small quantities. In the *Chemical Annals* for July 1792, the following account of it is given by himself. The platina is first pounded in water to disengage it from the ferruginous and other heterogeneous particles that are mixed with it. "This being done, I take (says he) 1½ lb. of platina, 2 lb. of white arsenic in powder, and 1 lb. of purified potash. I mix the whole: I put a crucible in the fire capable of containing about 20 lb. when my furnace and crucible are well heated, I throw into the crucible one 3d of the mixture, and apply a good heat; I then add a 2d quantity and a 3d, and so on, always taking care at every time to mix the whole with a

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rod of platina. I give now a considerable force to the fire; and when I am certain that the whole is completely in a state of fusion, I withdraw my crucible and leave it to cool. After breaking it, I find a button that is well formed and attractable by the magnet. I bruise this button into small pieces, and fuse it a 2d time in the same manner: if this 2d fusion, which it generally is, be not sufficient to effect the separation of the iron from the platina, I fuse it a 3d time; but if I be obliged to do it a 3d time, I always put two buttons together, to save at once a crucible and charcoal. This first operation being finished, I take a crucible with a flat bottom, and of a circumference to give to the button about $3\frac{1}{2}$ inches diameter. I make this crucible red hot, and throw into it $1\frac{1}{2}$ lb. of the platina which has been already fused with the arsenic after it was broken into small pieces; to this I add a quantity of arsenic of the same weight, and about half a pound of refined potash. I give to the fire a considerable force; and when I am certain that the whole is completely in a state of fusion, I withdraw my crucible and leave it to cool, taking care always to place it horizontally, that the button may be of an equal thickness. After breaking the crucible, I find a button clear and lustrous, and weighing commonly about 1 lb. 11 oz. I have remarked, that in proportion to the quantity of arsenic combined with the platina, the purification always succeeds with the more or less promptness and ease; and the greater the proportion, so much the better. In this state I put my button into a furnace under a muffle, not higher than the edge of the button lying on its flat side, and inclining a little to the walls of the muffle. In this manner I place three buttons on each side of the muffle, and apply fire to my furnace, that the muffle may be equally heated throughout: as soon as the buttons begin to evaporate I shut the doors of my furnace, that the heat may be kept up to the same degree; this ought always to be carefully attended to even to the end of the operation, for even a temporary excess of heat might spoil the whole of my past operations and render them abortive. I cause my buttons to volatilize during six hours, always taking care to change their situation, that every part may receive an equal portion of heat: I then put them in common oil, and for a like time keep them in a fire sufficient to dissipate the oil in smoke; I continue this operation as long as the button emits vapours, and when the evaporation has ceased I push the fire as far as it will go by means of the oil. These arsenical vapours have a bright shining metallic appearance, which I never can obtain any other way, and with which I have never been able to render platina perfectly malleable. If these steps which are here pointed out be properly followed, the operation lasts only 8 days. My buttons are then thrown into the nitrous acid, and afterwards boiled in distilled water, till no part of the acid remains with them: I now heap them together one above another, apply the strongest possible heat, and beat them with a hammer, taking always care at the first heat to make them red hot in the crucible, that no foreign bodies may mix with them, as before this compression they are only so many spongy masses. I afterwards

heat them in a naked state (*les chauffe à nud*); and bringing them to a square form, I hammer them on all sides for a shorter or longer time according to their bulk." Such is the process observed by Jeanety in fusing platina; but he thinks that the working of this metal is susceptible of still greater improvement. In 1788 it was accordingly proposed by some of the French chemists to fuse platina by mixing it with charcoal and phosphoric glass, and afterwards to expose the phosphure of platina to a heat sufficient to volatilize and dissipate the phosphorus. This method succeeded very well with M. Pelletier; but, besides being tedious, it is difficult to separate the last portions of the phosphorus; and as these operations are always costly, few artists are willing to undertake them. M. de Morveau has also fused platinum with his vitreous flux, made of pounded glass, borax, and charcoal; and Beauré has advised to fuse it with a slight addition of lead, bismuth, antimony, or arsenic, and by keeping the alloy in the fire a long time to dissipate the metals which have facilitated the fusion. Platinum may likewise be fused with a metal soluble in an acid; the mixture being pulverized, the alloyed metal may be dissolved, and the powder of platinum may then be fused with the flux of De Morveau; or, instead of using a soluble metal, M. Chaptal says, a calcinable metal may be employed, and heated as before. The colour of platinum, when properly refined, is something between that of iron and silver. It is the most durable of all the metals; it is harder than iron; it undergoes no alteration in the air, and fire alone does not even appear to possess the power of changing it; for which reason it forms the best of all crucibles that have yet been invented. It resists the action of acids, alkalis, and sulphurs; it may be rolled into plates as fine as leaves of gold which are used in gilding; it is likewise extremely ductile; and Dr Withering tells us, that a wire of platinum is stronger than a wire of gold or of silver of the same thickness; it is preferable to gold by the property which it has of soldering or welding without mixture; and it unites, says Chaptal, two qualities never before found in one and the same substance. When formed into a mirror, it reflects but one image, at the same time that it is as unchangeable as a mirror of glass. It is said, that a mine of platinum has been lately discovered in S. America.

PLATO, an illustrious philosopher of antiquity, was by descent an Athenian, though the place of his birth was the island of Ægina. His descent by his father was from CORVS the last king of Athens, and by his mother from SOLON the celebrated legislator. The time of his birth is placed in the beginning of the 88th Olympiad; but Dr Enfield thinks it may be more accurately fixed in the 3d year of the 87th Olympiad, or 430 years before the Christian era. He gave early indications of an extensive and original genius, and had an education suitable to his high rank, being instructed in the rudiments of letters by the grammarian Dionysius, and trained in athletic exercises by Aristotle of Argos. He applied with great diligence to the arts of painting and poetry, and wrote an epic poem, which, upon comparing it with those of Homer, he burnt. He next wrote a dramatic piece, which

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was to have been acted, but happening to attend upon a discourse of Socrates, he was so captivated by his eloquence, that he reclaimed his tragedy, renounced the Muses, burnt all his poems, and applied himself wholly to the study of wisdom. It is said, that Plato's first masters in philosophy were Cratylus and Hermogenes, who taught the systems of Heraclitus and Parmenides; but when he was 20 years old, he attached himself wholly to Socrates, with whom he remained 8 years as a scholar. During this period, he frequently displeased his companions, and sometimes even his master, by grafting upon the Socratic system opinions which were taken from some other stock. Plato, however, retained the warmest attachment to his master. When that great and good man was summoned before the senate, his illustrious scholar undertook to plead his cause, and begun a speech in his defence; but the partial judges would not permit him to proceed. After the condemnation, he presented his master with money sufficient to redeem his life; which, however, Socrates refused to accept. During his imprisonment, Plato attended him, and was present at a conversation which he held with his friends concerning the immortality of the soul; the substance of which he afterwards committed to writing in the beautiful dialogue entitled *Phædo*. The philosophers at Athens were so alarmed at the death of Socrates, that most of them fled from the city. Plato, whose grief upon this occasion is said by Plutarch to have been excessive, retired to Megara; where he was kindly entertained by Euclid, who had been one of Socrates's first scholars, till the storm was over. Afterwards he travelled in pursuit of knowledge; and from Megara he went to Italy, where he conferred with Eurytus, Philolaus, and Archytas, the most celebrated of the followers of Pythagoras, whose doctrine was then become famous in Greece; and from these the Pythagoreans have affirmed that he had all his natural philosophy. He next went to Cyrene, where he learned geometry of Theodorus the mathematician. Thence he passed into Egypt, to acquire their theology, to study more nicely the proportions of geometry, and to instruct himself in astronomical observations; and having taken a full survey of all the country, he settled for some time in the province of Sais, learning of the wise men there, what they held concerning the universe, whether it had a beginning, whether it moved wholly or in part, &c.; and Pausanias affirms, that he learned from these the immortality and transmigration of souls. He next travelled into Persia to consult the magi about the religion of that country. He then returned into Italy, to the Pythagorean school at Tarentum, where he endeavoured to improve his own system, by incorporating with it the doctrine of Pythagoras, as it was then taught by Archytas, Timæus, and others. And afterwards, when he visited Sicily, he retained such an attachment to the Italic school, that, through the bounty of Dionysius, he purchased at a vast price several books which contained the doctrine of Pythagoras, from Philolaus, one of his followers. Returning home richly stored with knowledge of various kinds, Plato settled in Athens, and formed a new school for

the instruction of youth in philosophy, in the academy. (See ACADEMUS and ACADEMY, § 2.) This new school soon became famous, and its master was ranked among the most eminent philosophers. People of the first distinction in every department frequented the academy. Even females, disguised in men's clothes, often attended his lectures. Among the illustrious names which appear in the catalogue of his followers, are Dion the Syracusan prince, and the orators Hyperides, Lycurgus, Demosthenes, and Isocrates. The distinguished reputation of Plato brought upon him the envy of his former companions in the school of Socrates, and they loaded him with detraction and obloquy. From this spirit, Xenophon and he, though they relate the discourses of their common master, avoid mentioning one another. Diogenes the Cynic ridiculed Plato's doctrine of ideas. In the midst of these private censures, however, the public fame of Plato daily increased; and several states, among which were the Arcadians and Thebans, sent ambassadors with earnest requests that he would come over, not only to instruct the young men in philosophy, but also to prescribe them laws of government. The Cyrenians, Syracusans, Cretans, and Eleans, sent also to him: he did not go to any of them, but gave laws and rules of governing to all. He lived single, yet soberly and chastely. He was a man of great virtues, and exceedingly affable; of which we need no greater proof, than his civil manner of conversing with the philosophers of his own times, when pride and envy were at their height. Diogenes, piqued at the politeness and fine taste of Plato, took every opportunity of snarling at him. He dined one day at his table with other company, and, trampling upon the tapestry with his dirty feet, said, "I trample upon the pride of Plato;" to which Plato wisely reparted, "With greater pride." The fame of Plato drew disciples to him from all parts; among whom were Speusippus an Athenian, his sister's son, whom he appointed his successor in the academy, and the great Aristotle. The admiration of this illustrious man was not confined to a few philosophers. He was in high esteem with several princes, particularly Archelaus king of Macedonia, and Dionysius tyrant of Sicily. At three different periods he visited the court of this latter prince, and made several bold but unsuccessful attempts to subdue his haughty spirit. The professed object (says Dr Enfield, in his *Hist. of Philo.*) of Plato's first visit to Sicily, which happened in the 40th year of his age, during the reign of the elder Dionysius, the son of Hermocrates, was, to take a survey of the island, and particularly of Mount Ætna. Whilst he resided at Syracuse, he was employed in the instruction of Dion, the king's brother-in-law, who possessed excellent abilities, though hitherto restrained by a tyrannical government, and relaxed by the luxuries of a licentious court. Disgusted by the debaucheries of the Syracusans, Plato endeavoured to rescue his pupil from the general depravity. Nor did Dion disappoint his hopes. No sooner had he received a taste of that philosophy which leads to virtue, than he was fired with an ardent love of wisdom. Hoping that philosophy might produce the same effect upon Dionysius,

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he procured an interview between Plato and the tyrant. During the conference, whilst Plato discoursed on the happiness of virtue, and the miseries attending injustice and oppression, Dionysius took offence, dismissed him with displeasure, and even formed a design against his life. It was not without difficulty that Plato escaped. A vessel which had brought over Pollis, a delegate from Sparta, was fortunately then returning to Greece. Dionysius engaged Pollis to land Plato safely in his native country; but Dionysius discovered the design, and made Pollis promise that he would either put him to death, or sell him as a slave. Pollis accordingly sold him in his native island of Ægina. Anicerris, a Cyrenaic philosopher, discovered the stranger, and purchased his freedom for 30 minæ, (84l. 10s. Sterling,) and sent him home to Athens. Repayment being afterwards offered to Anicerris by Plato's relations, he refused the money, saying, with that generous spirit which true philosophy inspires, that he saw no reason why the relations of Plato should engross to themselves the honour of serving him. After a short interval, Dionysius repented of his unjust resentment, and wrote to Plato requesting him to receive his credit by returning to Syracuse; to which Plato gave this high-spirited answer, that philosophy would not allow him leisure to think of Dionysius. He was, however, prevailed upon by Dion to return to Syracuse, and take upon him the education of Dionysius the younger, the heir apparent. He was received by Dionysius I. with every possible respect; but after seeing his friend banished, and being himself kept as a kind of prisoner at large in the palace, he was by the tyrant sent back into his own country, with a promise that both he and Dion should be recalled at the end of the war in which the Sicilians were then engaged. This promise was not fulfilled. The tyrant wished for the return of Plato; but could not resolve to recall Dion. At last, however, having probably promised that the philosopher should meet his friend at the court of Syracuse, he prevailed upon Plato to visit that capital a third time. When he arrived, the king met him in a magnificent chariot, and conducted him to his palace. The Sicilians too rejoiced in his return; for they hoped that the wisdom of Plato would at length triumph over the tyrannical spirit of the prince. Dionysius seemed wholly divested of his former resentments, listened with apparent pleasure to the philosopher's doctrine, and among other expressions of regard, presented him with 80 talents of gold. In the midst of a numerous train of philosophers, Plato now possessed the chief influence and authority in the court of Syracuse. Whilst Aristippus was enjoying himself in splendid luxury; whilst Diogenes was freely indulging his acrimonious humour; and whilst Æschines was gratifying his thirst after riches; Plato supported the credit of philosophy with an air of dignity, which his friends regarded as an indication of superior wisdom, but which his enemies imputed to pride. After all, Plato could not prevail upon Dionysius to alter his system of policy, or to recall Dion from exile. At length Plato requested permission to return to Greece, which

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was at last granted him, and he was sent home loaded with rich presents. On his way to Athens, passing through Elis during the celebration of the Olympic games, he was present at this general assembly of the Greeks, and engaged universal attention. From this narrative it appears, that if Plato visited the courts of princes, it was chiefly from the hope of seeing his ideal plan of a perfect republic realized. Plato now devoted himself to science, and spent the last years of a long life in the instruction of youth. Having enjoyed the advantage of an athletic constitution, and lived all his days temperately, he arrived at the 79th or 81st year of his age, and died in the first year of the 108th Olympiad. He passed his whole life in a state of celibacy, and therefore left no natural heirs, but transferred his effects, by will, to his friend Adiantus. The grove and garden, which had been the scene of his philosophical labours, at last afforded him a sepulchre. Statues and altars were erected to his memory; the day of his birth long continued to be celebrated as a festival by his followers; and his portrait is to this day preserved in gems; but the most lasting monuments of his genius, are his writings, which have been transmitted, without material injury, to the present times. The character of this philosopher has always been high. He had a comprehensive understanding, a vast fund of wit and good taste, great sweetness of temper, all cultivated and refined by education and travel; so that he was honoured by his countrymen, esteemed by strangers, and adored by his scholars. The ancients thought more highly of Plato than of all their philosophers: they always called him the *Divine Plato*; and they resolved that his descent should be more than human, for Apuleius mentions a common report, "that his mother Perictione, who was a very beautiful woman, was impregnated by Apollo in the shape of a spectre." Plutarch, Suidas, and others, affirm this to have been the common report at Athens. When he was an infant, his father Aristo went to Hymætus, with his wife and child, to sacrifice to the Muses; and while they were busied in the divine rites, a swarm of bees came and distilled their honey upon his lips. This, says Tully, was considered as a preface of his future eloquence. The Greeks loved fables; these show, however, what high respect was paid to the memory of Plato. Tully adored him; tells how he was justly called by Panætius the *divine*, the *most wise*, the *most sacred*, the *Homer of philosophers*; entitled him to *Astæus Deus ille noster*; thought, that if Jupiter had spoken Greek, he would have spoken in Plato's language; and made him so implicitly his guide in wisdom and philosophy, as to declare, that he had rather err with Plato than be right with any one else. But, panegyric aside, Plato was certainly a very wonderful man, of an imagination amazingly fertile, and of a most copious eloquence. Yet the heat of fancy prevailing in his composition over his judgment, he was too apt to soar beyond the limits of earthly things, to range in the imaginary regions of general and abstracted ideas; and therefore though there is always a greatness and sublimity in his manner, he did not phi-

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lophilize so much according to truth and nature as Aristotle, though Cicero gives him the preference. The writings of Plato are all in the form of dialogue; where he seems to deliver nothing from himself, but every thing as the sentiments and opinions of others, of Socrates chiefly, of Timæus, &c. He does not mention himself anywhere, except once in his *Phædo*, and another time in his *Apology* for Socrates. His style, as Aristotle observed, is betwixt prose and verse: on which account some have not scrupled to rank him with the poets. A better reason may be assigned for this: his matter is oftentimes the offspring of imagination, instead of truths deduced from nature. The first edition of Plato's works in Greek, was published by Aldus at Venice in 1513; but a Latin version by Muslinus Vicinus had been printed there in 1471. They were reprinted together at Lyons in 1588, and at Franckfort in 1602. Henry Stephens, in 1578, gave a most beautiful and correct edition of Plato's works at Paris, with a new Latin version by Serranus, in 3 vols folio; and this passes for the best edition of Plato: yet in many respects, if not in all, it is inferior to that of Ficinus.

PLATONBERG, a mountain of Germany, in the ci-devant duchy of Deux Ponts, now included in the French empire, and dep. of the Rhine and Moselle. It was fortified by the Prussians, who held it as a strong hold in 1793: but the French took it by assault in July 1794. It is four miles N. of Landau.

PLATONIC, *adj.* relating to Plato; his philosophy, opinions, and the like. Thus,

1. **PLATONIC LOVE** denotes a pure spiritual affection, for which Plato was a great advocate, subsisting between the different sexes, abstracted from all carnal appetites, and regarding no other object but the mind and its beauties; which many persons justly reckon an impossibility; or it is a sincere disinterested friendship subsisting between persons of the same sex, abstracted from any selfish views, and regarding no other object than the person; and such love or friendship certainly has a foundation in nature; and history, sacred and profane, records glorious instances; witness *JONATHAN* and *DAVID*; *ORESTES* and *PYLADES*, *ACHILLES* and *PATROCLUS*; *DAMON* and *PYTHIAS*, &c.

2. **PLATONIC PHILOSOPHY**. See **PHILOSOPHY**, *Sec. I.*; **PLASTIC**, § 4; and **PLATONISM**.

3. **PLATONIC TRINITY**. See **PLATONISM**.

4. **PLATONIC YEAR**, or the **GREAT YEAR**, is a period of time determined by the revolution of the equinoxes, or the space wherein the stars and constellations return to their former places, in respect of the equinoxes. The platonic year, according to Tycho Brahe, is 25816, according to Ricciolus, 25920, and according to Cassini, 24800 years. This period, once accomplished, it was an opinion among the ancients, that the world was to begin anew, and the same series of things to turn over again.

PLATONISM, *n. f.* the philosophy of Plato, which was divided into three branches, *theology*, *physics*, and *mathematics*. Under *theology* was comprehended metaphysics and ethics, or that

which, in modern language, is called *moral philosophy*. Plato wrote likewise on *dialectics*, but with such inferiority to his pupil Aristotle, that his works in that department of science are seldom mentioned. The ancient philosophers always began their theological systems with disquisitions on the nature of the gods, and the formation of the world; and it was a fundamental doctrine with them, that *from nothing nothing can proceed*. They believed that a proper creation is impossible even to Omnipotence, and that to the production of any thing, a *material* is not less necessary than an *efficient* cause. (See **METAPHYSICS**, *Sec. XXXV.*) That with respect to this important question, Plato agreed with his predecessors and contemporaries, appears evident from the whole tenor of his *Timæus*. We agree with Dr Enfield in thinking, that in this dialogue, which comprehends his whole doctrine on the formation of the universe, *matter* is so manifestly spoken of as eternally co-existing with God, that this part of his doctrine could not have been mistaken by so many learned and able writers, had they not been seduced by the desire of establishing a coincidence of doctrine between the writings of Plato and Moses. It is certain that neither Cicero, Apuleius, Alcianus, nor even Chalcidius, understood Plato in any other sense than as admitting two primary and incorruptible principles, *God* and *matter*; to which we have reason to add a third, namely *ideas*. The passages quoted by those who maintain the contrary opinion, by no means answer their purpose. Plato indeed calls God the *parent of the universe*, and speaks of him as "forming animate and inanimate beings, which did not before exist;" but these expressions do not imply that this offspring of Deity was produced from *nothing*, or that no prior matter existed from which they were formed. Through the whole *Timæus*, Plato supposes two eternal and independent causes of all things; one, that *by* which all things are made, which is God; the other, that *from* which all things are made, which is matter. He distinguishes between God, matter, and the universe, and supposes the Architect of the world to have formed it out of a mass of pre-existent matter. Matter, according to Plato, is an eternal and infinite principle. His doctrine on this head is thus explained by Cicero: "Matter, from which all things are produced and formed, is a substance without form or quality, but capable of receiving all forms, and undergoing every kind of change; in which, however, it never suffers annihilation, but merely a solution of its parts, which are in their nature infinitely divisible, and move in portions of space which are also infinitely divisible. When that principle which we called quality is moved, and acts upon matter, it undergoes an entire change, and those forms are produced from which arises the diversified and coherent system of the universe." Plato also insists upon the notion, that matter has originally no form, but is capable of receiving any. He calls it the mother and receptacle of forms, by the union of which with matter, the universe becomes perceptible to the senses; and maintains, that the visible world owes its forms to the energy of the divine

lively intellectual nature. Our author is supported in drawing this inference, by the testimony of Diogenes Laertius, who surely understood the language and opinions of Plato better than the most accomplished modern scholar can pretend to do; yet the learned Dr Ogilvie has expressed great surprise that any one should consider matter as having been, in Plato's opinion, uncreated; and he affirms, that Laertius, instead of asserting that spirit and matter were the principles of all things, ought to have said, that God alone, in Plato's estimation, was their original. To prove this, he gives from the *Timæus*, a quotation, in which Plato declares that God *framed* heaven and earth, and the inferior deities; and that as he *fashioned*, so he pervades all nature. He observes, that Cicero denominates the god of Plato, the *maker*, and the god of Aristotle only the *governor* of the world. And, to satisfy those who demand a proof of Plato's having taught a real creation, he affirms that his writings abound with declarations on the subject, of which the meaning cannot be misapprehended. But the declarations of Plato on this subject appear by no means explicit; and the inference which Dr Ogilvie draws from the words of Cicero seems not to flow necessarily from the sense of those words. That Plato believed God to have framed the heaven and the earth, and to have *fashioned* all nature, is a position which has never been controverted; but between *framing* or *fashioning* the chaos, and calling the universe into existence from *nonentity*, there is an infinite and an obvious difference. The distinction made by Cicero between the God of Plato and the God of Aristotle is just, but it will not bear the superstructure which Dr Ogilvie builds upon it. Aristotle maintained the eternity of the world in its present form. Plato taught that the first matter was in time reduced from a chaotic state into form by the power of the Demiurgus; but nothing in his writings declares his belief that the first matter was itself created. The learned Cudworth, who wished, like Dr Ogilvy, to find a coincidence of doctrine between the theology of Plato and that of the Gospel, exerted all his abilities to prove, that Plato taught a proper creation; but he laboured in vain. He gives a number of quotations in support of his position; of which we shall here insert only those two, upon which Dr Ogilvie seems to lay the greatest stress. Plato, (says he) calls the one God, "*He that makes earth, and heaven, and the gods, and doth all things both in heaven, and hell, and under the earth.*" And again, "he by whose efficiency the things of the world were afterwards made, when they were not before." Both Cudworth and Ogilvie think this last sentence an explicit declaration of Plato's belief in the creative power of God; but that they are mistaken, has been evinced by Mosheim with a force of argument which will admit of no reply. Mosheim thinks that Cudworth was misled by too implicit a confidence in *Ficinus*; and it is not impossible that Dr Ogilvie may have been swayed by the authority of Cudworth. That intellect existed antecedent to all bodies, is indeed a Platonic dogma, from which Dr Ogilvie, after Cudworth, wishes to infer that

the doctrine of the creation was taught in the academy; but Dr Ogilvie knows, and no man knew better than Cudworth, that Plato, with every other Greek philosopher, distinguished between *body* and *matter*; and that though he held the priority of intellect to the former, it by no means follows that he believed it to have existed antecedent to the latter. That he believed *mind*, or rather *soul* (for he distinguishes between the two) to be the cause or principle of motion, cannot be denied; but we are not therefore authorized to conclude that he likewise believed it to be the cause of the existence of matter. That he believed mind to be the most ancient of *all things*, taking the word *things* in the most absolute sense, cannot be true, since by Dr Ogilvie's own acknowledgement, he held the existence and eternity of *ideas*, not to add that he believed *πρῶτον* or *πρωτόγονον*, the first hypostasis in his trinity, to be superior to mind and prior to it, though not in time, yet in the order of nature. When, therefore, he calls mind the most ancient of *all things*, he must be supposed to mean only, that it is more ancient than all bodies and inferior souls. It is no reflection on Plato that he could not, by the efforts of his own reason, acquire any notion of a proper creation; since we, who have the advantage of his writings, and of writings infinitely more valuable, find it extremely difficult, if not impossible, to conceive how any thing can begin to be. We believe the fact on the authority of revelation; but should certainly have never agitated such a question, had it not been stated to us by writers inspired with celestial wisdom. In the Platonic cosmogony, we cannot, therefore, doubt, but that the eternity of the *van ægula* was taken for granted. But Plato did not believe it to have a single form or quality which it did not receive either from the *Demiurgus* or the *Psyche*—the 2d or 3d person of his trinity. Except Aristotle, all the Greek philosophers, who were not materialists, held nearly the same opinions respecting the origin of the world; so that in examining their systems, we shall be greatly misled, if we understand the terms *incorporeal* and *immaterial* as at all synonymous. It was also a doctrine of Plato, that there is in matter, a necessary, but blind and refractory force; and that hence arises a propensity in matter to disorder and deformity, which is the cause of all the imperfection which appears in the works of God, and the origin of evil. On this subject, Plato writes with wonderful obscurity, but he appears to have thought, that matter, from its nature, resists the will of the Supreme Artificer, so that he cannot perfectly execute his designs; and that this is the cause of the mixture of good and evil in the material world. Plato, however, was no materialist. He taught, that there is an intelligent cause, which is the origin of all spiritual being, and the former of the material world. The nature of this great being he pronounced it difficult to discover. The existence of God he inferred from the marks of intelligence which appear in the form and arrangement of beings in the visible world: and from the unity of the material system, he concluded, that the mind by which it was

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formed must be ONE. God, according to Plato, is the supreme intelligence, incorporeal, without beginning, end, or change, and capable of being perceived only by the mind. His notions of God are indeed exceedingly refined, and such as it is difficult to suppose that he could ever have acquired, but from some obscure remains of primeval tradition. In the Divine Nature he believed that there are two, and probably three, *hypostases*, whom he called *το ειν* and *το εν*, *νους* and *ψυχη*. The first he considered as self-existent, and elevated far above all mind and all knowledge; calling him, by way of eminence, *the being, or the one*. The only attribute which he acknowledged in this person was goodness; and therefore he frequently styles him *το αγαθον—the good, or essential goodness*. The 2d he considered as mind, the *wisdom or reason* of the first, and *the maker of the world*; and therefore he styles him *νους*, *λογος*, and *δημιουργος*. The 3d he always speaks of as *the soul of the world*; and hence calls him *ψυχη*, or *ψυχη του κοσμου*. He taught that the second is a necessary emanation from the first, and the third from the second, or perhaps from the first and second. Plato often asserts, as superior to the self-moving principle, an immoveable *νους*, or intellect, which was properly the *demiurgus* or framer of the world; and above this *hypostasis* one most simple and absolutely perfect being, who is considered in his *Theology* as *αυθεντικος, the original deity*, in contradistinction from the others, who are only *θεοι εν θεω*. These doctrines are to be gathered from his works at large, particularly from his *Timæus*, *Philebus*, *Sophistæ*, and *Epinomis*; but there is a passage in his 2d epistle to Dionysius, in answer to a letter in which that monarch had required him to give a more explicit account of the nature of God, in which the doctrine of a Trinity seems to be directly asserted, “The Lord of Nature (says Plato) is surrounded on all sides by his works: whatever is, exists by his permission: he is the fountain and source of excellence: around the 2d person are placed things of the 2d order; and around the 3d those of the 3d degree.” Of this obscure passage a very satisfactory explanation is given in Dr Ogilvie’s *Theology of Plato*, to which we refer the reader. The account given above of the Platonic Trinity is ably supported by the Doctor. In treating of the eternal emanation of the second and third *Hypostases* from the first, the philosophers of the academy compare them to light and heat proceeding from the sun. Plato himself, as quoted by Dr Cudworth, illustrates his doctrine by the same comparison. The resemblance which this trinity of Plato bears to that revealed in the gospel, must be observed by every reader; but the two doctrines are in some respects exceedingly dissimilar. The third *hypostasis* in the Platonic system appears in no point of view co-ordinate with the first or second. Indeed the first is elevated far above the second, and the third sunk still farther beneath it, being considered as a mere soul immersed in matter, and forming with the corporeal world, to which it is united, one compound animal. Nay, it is not certain, that Plato considered his *ψυχη του κοσμου* as a pure spirit, or as having subsisted from eternity as a distinct *Hypostasis*. “This governing

spirit, of whom the earth, properly so called, is the body, consisted, according to him, of the *first matter*, and of *pure intelligence*, framed to actuate the machinery of nature. The Supreme Being placed him in the middle of the earth; which, in the vivid idea of Plato, seemed itself to live, in consequence of an influence that was felt in every part of it. From this feat his power is represented as being extended on all sides to the utmost limit of the heavens; conferring life, and preserving harmony in the various and complicated parts of the universe. Upon this being God looked with peculiar complacency after having formed him as an image of himself, and gave beauty and perfect proportion to the mansion which he was destined to occupy. The Supreme being struck out from this original mind innumerable spirits of inferior order, endowed with principles of reason; and he committed to divinities of secondary rank the task of investing these in material forms, and of dispersing them as inhabitants of the sun, moon, and other celestial bodies. He taught also, that at death the human soul is reunited to the *ψυχη του κοσμου*, as to the source from which it originally came.” Such is the third person of the Platonic triad, as we find his nature and attributes accurately stated by Dr Ogilvie; and the Christian philosopher will not require another proof, that the triad of Plato differs exceedingly from the Trinity of the Scriptures. That his doctrine on this subject should be inaccurate and erroneous, can excite no wonder; whilst it must be confessed to have such a resemblance to the truth, and to be so incapable of being proved by reasoning from effects to causes, that we could not doubt of his having inherited it by tradition, even though we had not complete evidence that something very similar to it was taught long before him, not only by Pythagoras and Parmenides, but by the philosophers of the east. In Plato’s cosmogony there is another principle, more mysterious, if possible, than any thing yet mentioned. This is his intellectual system of *ideas*, which it is not easy to collect from his writings, whether he considered as *independent existences*, or only as *archetypal forms*, which had subsisted from eternity in the *λογος* or divine intellect. On this subject he writes with such exceeding obscurity, that men of the first eminence, both among the ancients and the moderns, have differed about his real meaning. Some have supposed, that by *ideas* he meant real beings subsisting from eternity, independent of all minds, and separate from all matter; and that of these ideas he conceived some to be living, and others to be without life. In this manner his doctrine is interpreted by Tertullian among the ancients, by the celebrated Brucker among the moderns, and by many others equally learned, candid, and acute. But Cudworth and his annotator Meßheim, contend, that by his ideal world Plato meant nothing more than that there existed from eternity in the *λογος*, or mind of God, a notion of every thing which was in time to be made. This is certainly much more probable, than that such a man as Plato should have supposed, that there are somewhere in extramundane space real living incorporeal beings eating and drinking, which are the *ideas* of all the animals which

which ever have been or ever will be eating and drinking in this world. Yet Mosheim acknowledges, that if the controversy were to be decided by the votes of the learned, he is doubtful whether it would be given for or against him; and Cudworth owns, that on this subject Plato's language cannot be vindicated. This indeed is true, for Plato contends, that his ideas are not only the objects of science, but also the proper or physical causes of all things here below; that the *idea* of similitude is the *cause* of the resemblance between two globes; and the *idea* of dissimilitude the cause that a globe does not resemble a pyramid: he likewise calls them *εἴδωτα*, *essences* or *substances*, and many of his followers have pronounced them to be *animals*. Dr Enfield, having observed, that some of the admirers of Plato contend, that by ideas existing in the reason of God, nothing more is meant than conceptions formed in the Divine mind, controverts this opinion with much effect. "By ideas, Plato (says he) appears to have meant something much more mysterious; namely patterns or archetypes subsisting by themselves, as real beings, *ὡς αὐτὰ ἐν αὐτῇ* in the Divine reason, as in their original and eternal region, and issuing thence to give form to sensible things, and to become objects of contemplation and science to rational beings. It is the doctrine of the Timæus, that *τὸ λογισμὸς τῷ Θεῷ*, the reason of God, comprehends exemplars of all things, and that this reason is one of the primary causes of things. Plutarch says, that Plato supposes three principles, God, Matter, and Idea. Justin Martyr, Pseudo-Origen, and others, assert the same thing. That this is the true Platonic doctrine of *ideas* appears probably from the manner in which Plato framed his system of opinions concerning the origin of things. "Having been from his youth (says Aristotle) conversant with Cratylus, a disciple of Heraclitus, and instructed in the doctrine of that school, that all sensible things are variable, and cannot be proper objects of science, he reasonably concluded, that if there be any such thing as science, there must exist, besides sensible objects, certain permanent natures, perceptible only by the intellect." Such natures, divine in their origin, and eternal and immutable in their existence, he admitted into his system, and called them *ideas*. Visible things were regarded by Plato as fleeting shades, and ideas as the only permanent substances. These he conceived to be the proper objects of science to a mind raised by divine contemplation above the perpetually varying scenes of the material world." It was a fundamental doctrine in the system of Plato, that the Deity formed the material world after a perfect model, consisting of those ideas which had eternally subsisted in his own reason; and yet, with apparent contradiction, he calls this model "*self-existent, indivisible, and eternally generated.*" Nay, he talks of it as being intelligent as well as eternal, and wholly different from the transcripts which are subjected to our inspection. There is so much mystery, confusion, and apparent absurdity, in the whole of this system, as it has come down to us, that it is surprising, that Plato should have had so many admirers. With almost every ancient theist of Greece, Plato believed in an order of beings called *dæmons*,

which were superior to the souls of men, and struck off by the Demiurgus from the foul of the world. Of these the reader will find some account under *DÆMON* and *POLYTHEISM*. We mention them here because they make an important appearance in Plato's system of physics, which was built upon them. He taught that the visible world was formed by the Supreme architect, uniting eternal and immutable ideas to the first matter; that the universe is one animated being, including within its limits all animated natures; that, in the formation of the visible and tangible world, fire and earth were first formed, and were afterwards united by means of air and water; that from perfect parts one perfect whole was produced, of a spherical figure, as most beautiful in itself, and best suited to contain all other figures; that the elementary parts of the world are of regular geometrical forms, the particles of earth being cubical, those of fire pyramidal, those of air in the form of an octohedron, and those of water in that of an icohedron; that these are adjusted in number, measure, and power, in perfect conformity to the geometrical laws of proportion, that the soul which pervades this sphere is the cause of its revolution round its centre; and, lastly, that the world will remain for ever, but that by the action of its animating principle, it accomplishes certain periods, within which every thing returns to its ancient place and state. This periodical revolution of nature is called the *PLATONIC* or *GREAT YEAR*. (See *PLATONIC*, § 4.) Plato, preparatory to the study of all philosophy, required from his disciples a knowledge of the elements of *MATHEMATICS*. In his *Republic*, he makes Glaucus, one of the speakers, recommend them for their usefulness in human life. Concerning policy, Plato has written at large in his *Republic* and in his *Dialogue on Laws*. He was so fond of his own ideas on this subject, that it was chiefly the hope of having an opportunity to realise his plan of a republic, which induced him to visit the court of Dionysius. But they who are conversant with mankind, and capable of calmly investigating the springs of human actions, will easily perceive that his projects were chimerical, and could only have originated in a mind replete with philosophical enthusiasm. Of this nothing can be a clearer proof than the design of admitting in his republic a community of women, to give reason an entire controul over desire. The main object of his political institutions appears to have been the subjugation of the passions and appetites, by means of the abstract contemplation of ideas. A system of policy, raised upon such fanciful grounds, cannot merit a more distinct consideration." Such is genuine *PLATONISM* as it was taught in the old academy by the founder of the school and his immediate followers; but when Arcefilaus was placed at the head of the academics, great innovations were introduced both into their doctrines and mode of teaching. (See *ARCESILAUS*.) This man was therefore considered as the founder of what was afterwards called the *middle academy*. Being a professed sceptic, he carried his maxim of uncertainty to such a height, as to alarm the general body of philosophers, offend the governors of

of the state, and bring just odium upon the very name of the academy. At length *Carneades*, one of the disciples of this school, relinquishing some of the more obnoxious tenets of *Arceilaus*, founded what has been called the *new academy* with very little improvement on the principles of the middle. See *CARNEADES*. Under one or other of these forms *Platonism* found its way into the Roman republic. *Cicero* was a Platonist, and one of the greatest ornaments of the school. A school of Platonists was likewise founded in *Alexandria* in the 2d century of the Christian era; but their doctrines differed in many particulars from those taught in the three academies. They professed to seek truth wherever they could find it, and to collect their dogmas from every school. They endeavoured to bend some of the principles of *Plato* into a conformity with the doctrines of the gospel; and they incorporated with the whole many of the maxims of *Aristotle* and *Zeno*, and not a few of the fictions of the east. Their system was therefore extremely heterogeneous, and seldom to rational as that of the philosopher after whose name they were called, and of whose doctrines we have given so copious a detail. See *AMMONIUS*, *ECLECTICS*, and *PLO-TINUS*.

PLATONIST, *n. f.* A philosopher, who adopts the sentiments and system of *PLATO*.

To **PLATONIZE**, *v. n.* [*platonizo*, Lat.] To adopt and imitate the style, sentiments, and philosophy of *Plato*. See To *PHILONIZE*.

(1.) * **PLATOON**, *n. f.* [a corruption of *peloton*, Fr.] A small square body of musketeers, drawn out of a battalion of foot, when they form the hollow square, to strengthen the angles: the grenadiers are generally thus posted; yet a party from any other division is called a *platoon*, when intending too far from the main body. *Military Dict.*—

In comely wounds shall bleeding worthies stand,

Webb's firm *platoon*, and Lumley's faithful band.

Tickel.

(2.) **PLATOON EXERCISE**, an important branch of *MILITARY* service, which is the sequel of the *MANUAL EXERCISE*, and the regulations respecting which are published along with those respecting the former. The following is an abstract of the *PLATOON EXERCISE*, as altered and abridged "by his Majesty's Command, April 20, 1792," and published at London, in 1795, by *William Fawcett*, Adjutant General "to be invariably practised by his whole army." The *PLATOON EXERCISE* is always to be done with ranks closed, except at the Drill. **WORDS OF COMMAND.** I. "Make ready. As usual, bring the firelock to the *recover*, and instantly cocking. 1st. Slip the left hand along the sling as far as the swell of the firelock, and bring the piece down to II. *Present*, stepping back about six inches to the rear with the right foot. III. *Fire*. After firing, drop the firelock briskly to the *priming* position. 2d. Half cock. IV. *Handle Cartridge*. 1st. Draw the cartridge from the pouch. 2d. Bring it to the mouth, holding it between the fore-finger and thumb, and bite off the top of it. V. *Prime*. 1st. Shake some powder into the pan. 2. Shut the

pan with the three last fingers. 3d. Seize the small of the butt with the above three fingers. VI. *Load*. 1st. Face to the left on both heels, so that the right toe may point directly to the front, and the body be a very little faced to the left, bringing at the same time the firelock round to the left side without sinking it. It should, in this momentary position, be almost perpendicular, (having the muzzle only a small degree brought forward, and as soon as it is steady there, it must instantly be forced down within 2 inches of the ground, the butt nearly opposite the left heel, and the firelock itself somewhat sloped, and directly to the front; the right hand at the same instant catches the muzzle, in order to steady it. 2d. Shake the powder into the barrel putting in after it the paper and ball. 3. Seize the top of the ramrod with the fore-finger and thumb. VII. *Draw Ramrod*. 1st. Force the ramrod half out, and seize it backhanded exactly in the middle. 2d. Draw it entirely out, and turning it with the whole hand and arm extended from you, put it one inch into the barrel. VIII. *Ram down Cartridge*. 1st. Push the ramrod down, holding it as before exactly in the middle till the hand touches the muzzle. 2d. Slip the fore-finger and thumb to the upper end, without letting the ramrod fall further into the barrel. 3d. Push the cartridge well down to the bottom. 4th. Strike it two very quick strokes with the ramrod. 1st. Draw the ramrod half out, catching it backhanded. 2d. Draw it entirely out, turning it very briskly from you, with the arm extended, and put it into the loops, forcing it as quick as possible to the bottom; then face to the proper front, the finger and thumb of the right hand holding the ramrod, as in the position immediately previous to drawing it, and the butt raised two inches from the ground. Strike the top of the muzzle smartly with the right hand, in order to fix the bayonet, and ramrod, more firmly, and at the same time throw it nimbly up, at one motion, to the shoulder. N. B. Though the butts are not to come to the ground in casting about, as accidents may happen from it, yet they are permitted, while loading, to be so rested; but it must be done without noise, and in a manner imperceptible in the front. **EXPLANATION OF PRIMING AND LOADING QUICK.** *Words of Command.* I. *Prime and Load*. 1st. Bring the firelock down in one brisk motion to the priming position, the thumb of the right hand placed against the pan cover, or steel; the fingers clenched; and the elbow a little turned out, so that the wrist may be clear of the cock. 2d. Open the pan, by throwing up the steel, with a strong motion of the right arm, turning the elbow in, and keeping the firelock steady in the left hand. 3d. Bring your hand round to the pouch, and draw out the cartridge. The rest as above described, excepting that, in the quick loading, all the motions are to be done with as much dispatch as possible: the soldiers taking their time from the flugel man in front, for *casting over, and shouldering only*. In firing three deep, the *priming position* for the front rank is the height of the waistband of the breeches: for the center rank, about the middle of the stomach; and for the rear rank, close to the breast; the firelock, in all these positions, is to be kept

kept perfectly horizontal. **EXPLANATION OF THE POSITION OF EACH RANK IN THE FIRINGS.**
Front rank, kneeling. II. *Make ready.* Bring the firelock briskly up to the *recover*, catching it in the left hand; and, without stopping, sink down with a quick motion upon the right knee, keeping the left foot fast, the butt end of the firelock, at the same moment, falling upon the ground; then cock, and instantly seize the cock and steel together in the right hand, holding the piece firm in the left, about the middle of that part which is between the lock and the swell of the stock; the point of the left thumb to be close to the swell, and pointing upwards. As the body is sinking, the right knee is to be thrown so far back, that the left leg may be right up and down, the right foot a little turned out, the body straight, and the head as much up as if shouldered; the firelock must be upright, and the butt about four inches to the right of the inside of the left foot.
 III. *Present.* Bring the firelock down firmly to the *present*, by sliding the left hand, to the full extent of the arm, along the sling, without letting the motion tell;—the right hand at the same time springing up the butt by the cock so high against the right shoulder, that the head may not be too much lowered in taking aim; the right cheek to be close to the butt; the left eye shut, and the middle finger of the right hand on the trigger, look along the barrel with the right eye from the breech pin to the muzzle, and remain steady. IV. *Fire.* Pull the trigger strong with the middle finger, and as soon as fired, spring up nimbly upon the left leg, keeping the body erect and the left foot fast, and bringing the right heel to the hollow of the left; at the same instant drop the firelock to the priming position, the height of the waistband of the breeches; *half cock*; *handle cartridge*; and go on with loading motions, as before described.
Centre rank. I. *Make ready.* Spring the firelock briskly to the *recover*; as soon as the left hand seizes the firelock above the lock, raise the right elbow a little, placing the thumb of that hand upon the cock, with the fingers open on the plate of the lock, and then, as quick as possible, cock the piece, by dropping the elbow, and forcing down the cock with the thumb, step at the same time with the right foot a moderate pace to the right, and keeping the left fast, seize the small of the butt with the right hand: the piece must be held in this position perpendicular, and opposite the left side of the face, the butt close to the breast, but not pressed, the body straight and full to the front, and the head erect. II. *Present.* As in the foregoing explanation for the front rank. III. *Fire.* Pull the trigger strong with the middle finger, and, as soon as fired, bring the firelock to the priming position, about the height of the stomach; the rest, as in explanation of *priming* and *loading*—with this difference only, that the left foot is to be drawn up to the right, at the same time that the firelock is brought down to the priming position; and that, immediately after the firelock is thrown up to the shoulder, the men spring to the left again, and cover their file leaders.
Rear rank. I. *Make ready.* Recover and cock, as before directed for the centre rank, and as the firelock is brought to the *recover*, step briskly to

the right a full space, at the same time placing the left heel about six inches before the point of the right foot.—The body to be kept straight, and as square to the front as possible. II. *Present.* As in explanation for the centre rank, remembering only the difference of the priming position for this rank, as before described; after firing and shouldering, the men step, as the centre rank does. III. *Fire.* In firing with the front rank *standing*, that rank makes ready, &c. as specified in the article relative to the *platoon exercise*. N.B. In giving words of command, as well in as out of the ranks, officers are to stand perfectly steady, and in their proper position; their swords held firmly in the full of the right hand, with the upper part of the blade resting against the shoulder, the right wrist against the hip, and the elbow drawn back. **FIRING BY PLATOONS.** The officers, instead of giving the words, *platoon, make ready, present, fire*, are to pronounce the words short, as for instance, *toon, ready, plent, fire*. In firing by platoons, or divisions, the officers commanding them are to step out one pace, on the close of the *preparative*, and face to the left towards their men: They there stand perfectly steady till the least part of the *general*, when they step back again into their proper intervals, all at the same time. After a division has fired, the right hand man of it steps out one pace, in front of the officers, but still keeping his own proper front, and gives the time for *casting about* and *shouldering*, after which he falls back again into his place in the front. The flugel man of a battalion is also to keep his front, in giving the time of exercise. In firing by grand divisions, the centre officer falls back, on the *preparative*, into the fourth rank, and is replaced by the covering serjeant."

PLATS, *n. f.* in sea language, the flat ropes used to keep the cable from gulling. *Aff.*

PLATTEN, a town of Bohemia, in Leitmeritz; 4 miles E. of Kamnitz.

PLATTENBURG, a town of Upper Saxony, in Prignitz; 4 miles E. of Wilsnack.

* **PLATTER**, *n. f.* [from *plate*.] A large dish, generally of earth.—

The servants wash the *platter*. *Dryden*.
 —Satura is an adjective, to which *lanx*, a charger, or large *platter* is understood. *Dryden*.

(1.) **PLATTSBURG**, or } an extensive town-
 (1.) **PLATTSBURGH**, } ship of New York,
 in Clinton county, on the W. bank of Lake Champlain, about 300 miles N. of New York. In 1790, it contained 443 citizens, and 13 slaves. In 1796, 142 of the citizens were qualified to be electors.

(2.) **PLATTSBURGH**, the capital of the above township, has a church, court-house, and goal, with artists in almost every branch. Courts of Common Pleas, and general Sessions, are held in it twice a year. It is 5 miles W. of Ticonderoga.

PLATZ, a town of Bohemia, in Bechin.

(1.) **PLAU**, a town of France, in the dep. of the Correze; 18 miles E. of Tulle.

(2.) **PLAU**, or **PLAUVEN**, a town of Lower Saxony, in Mecklenburg, on the Plauer See, 15 miles E. of Parchim, and 32 S. of Rostock.

* **PLAUDIT**. } *n. f.* [A word derived from
 * **PLAUDITE**. } the Latin, *plaudite*, the demand

mand of applause made by the player, when he left the stage.] Applause.—

True wisdom must our actions so direct,

Not only the last *plaudis* to expect. *Denham*.
—Instead of a *plaudite*, he would deserve to be hissed off the stage. *More*.—Even these can discern music in a concert of *plaudites*, eulogies given themselves. *Decay of Piety*.

(1.) **PLAUEN**, or } a town of Brandenburg,
(1.) **PLAVEN**, } with a manufacture of
porcelain; 6 miles W. of Brandenburg.

(2.) **PLAUVEN**, a lake near the above town, formed by the Havel, which runs by a canal into the Elbe.

(3—5.) **PLAUVEN**, **PLAVEN**, or **PLAWEN**, a town of Mecklenburg, on a river and lake of the same name, which run into the Elbe; 17 miles S. of Gustrów. Lon. 12. 13. E. Lat. 53. 40. N.

(6—7.) **PLAUVEN**, or **PLAWEN**, two towns of Upper Saxony; 1. in Schwartzburg, on the Gera, 4 miles S. of Arnstadt, and 16 NW. of Schwartzburg: In 1640, it was burnt by the Swedes: 2. in Vogtland, on the Elster, with a cotton manufacture; 23 miles SW. of Zwickau, and 72 WSW. of Dresden. Lon. 29. 52. E. Ferro. Lat. 50. 24. N.

(8.) **PLAUVEN**. See **PLAU**, N° 4.
PLAUSER SEE, a lake of Mecklenburg, E. of **Plau**, 20 miles in circumference.

PLAUSCHNITZ, a town of Bohemia, in Bolestaw; 3 miles ESE. of Turnau.

* **PLAUSIBILITY**. *n. f.* [*plausibilité*, Fr. from *plausible*.] Speciousness; superficial appearance of right.—Two pamphlets, called the management of the war, are written with some *plausibility*, much artifice, and direct falsehoods. *Swift*.—The last excuse was allowed indeed to have more *plausibility*, but less truth, than any of the former. *Swift*.

* **PLAUSIBLE**. *adj.* [*plausible*, Fr. *plausibilis*, from *plaudo*, Lat.] Such as gains approbation; superficially pleasing or taking; specious; popular; right in appearance.—Go you to Angelo, answer his requiring with a *plausible* obedience. *Shak*.—Judges ought to be more reverent than *plausible*. *Bacon*.—They found that *plausible* and popular pretext of raising an army to fetch in delinquents. *King Charles*.—These were all *plausible* and popular arguments. *Clarendon*.—No treachery to *plausible*, as that which is covered with the robe of a guide. *L'Estrange*.—The case is doubtful, and may be disputed with *plausible* arguments on either side. *South*.

* **PLAUSIBLENESS**. *n. f.* [from *plausible*.] Speciousness; show of right.—The *plausibleness* of Arminianism, and the congruity it hath with the principles of corrupt nature. *Sanderfon*.—The notion of man's free will, and the nature of sin, bears with it a commendable plainness and *plausibleness*. *More*.

* **PLAUSIBLY**. *adv.* [from *plausible*.] 1. With fair show; speciously.—They could talk *plausibly* about that they did not understand. *Collier*.—

Thou can't *plausibly* dispute,

Supreme of feers, of angel, man, and brute.

Prior.

2. With applause, Not in use.—I hope they will *plausibly* receive our attempts. *Brown*.

* **PLAUSIVE**. *adj.* [from *plaudo*, Lat.] 1. Applauding. 2. Plausible. A word not in use.—

His *plausive* words

He scatter'd not in ears.

Shak.

PLAUTIUS. See **PLAUTIUS**, N° 3.

PLAUTIUS, Marcus Accius, a comic writer of ancient Rome, born at Umbria, in Italy. He is said to have acquired the AGNOMEN of *Plautus* from having *play feet*. His parentage appears to have been mean; some say he was the son of a slave. Aulus Gellius says from Varro, that *Plautus* was so well paid for his plays, as to double his stock in trading, in which he lost all he gained by the Muses. He was reduced to work at a mill for his subsistence; but Varro adds, that his wit was his best support, as he composed three of his plays during this drudgery. He died in the first year of the elder Cato's censorship, about A. U. C. 569, and A. A. C. 184. There are 20 of his plays extant, though not all entire. Five of his comedies have been elegantly translated into English by Mr B. Thornton, and published in 2 vols 8vo, 1767.

PLAUZAT, a town of France, in the dep. of Puy de Dome; 10 miles S. of Clermont.

PLAWEN, or **PLAVEN**. See **PLAUVEN**, N° 3—7.

(1.) * **PLAY**. *n. f.* 1. Action not imposed; not work; dismissal from work. 2. Amusement; sport.—

My darling and my joy;
For love of me leave off this dreadful *play*.

Spenser.

Two gentle fawns at *play*.

Milton.

3. A drama; a comedy or tragedy, or any thing in which characters are represented by dialogue and action.—

Only they,

That come to hear a merry *play*,

Will be deceiv'd.

Shak.

—A *play* ought to be a just image of human nature. *Dryden*.

Visits, *plays*, and powder'd beaux.

Swift.

4. Game; practice of gaming; contest at a game.—

I did never win of you,

Nor shall not when my faucy's on my *play*.

Shak.

5. Practice in any contest, as swordplay.—They find it the best of their *play* to put it off with a jest. *L'Estrange*.—He was resolved not to speak distinctly, knowing his best *play* to be in the dark. *Tillotson*.—The answer on his side makes it his *play* to distinguish as much as he can. *Locke*.—Join naturally low'd rough *play*. *Arbutnot*. 6. Action; employment; office.—

The senseless plea of right by providence

Can last no longer than the present sway;

But justifies the next who comes in *play*.

Dryden.

7. Practice; action; manner of acting; as fair and foul *play*.—Determining not to be far from the place where we appointed to meet, to prevent any foul *play* that might be offered unto me. *Sidney*. 8. Act of touching an instrument. 9. Irregular and wanton motion. 10. A state of agitation or ventilation.—

Many have been fav'd, and many may,

Who

Who never heard this question brought in *play*.

Dryden.

Room for motion.—The joints are let exactly one another, that they have no *play* between n. *Maxon's Merchant. Exer.* 12. Liberty of ng; swing.—Should a writer give the full *play* is mirth, without regard to decency, he might offend readers; but must be a very ill man, if he did please himself. *Addison.*

2.) *PLAYS.* See *THEATRE.*

1.) * *To PLAY. v. n.* [*plegam, Saxon.*] 1. To rt; to frolick; to do something not as a task, for a pleasure.—The people sat down to eat, to drink, and rose up to *play.* *Exodus.*—

On smooth the seal and bended dolphins *play.*

Milton.

Boys and girls come out to *play.* *Old Song.*
To toy; to act with levity.—

Wisdom thy sister and with her didst *play.*

Milton.

Heavy whales in awkward measures *play.*

Pope.

To be dismissed from work.—'Tis a *playing* y I see. *Shak.* 4. To trifle; to act wantonly & thoughtlessly.—Men are apt to *play* with their alms and their lives. *Temple.* 5. To do something fanciful.—

How every fool can *play* upon the word!

Shak.

To practise sarcastic merriment.—I would make use of it rather to *play* upon those I despised than to trifle with those I loved. *Pope.* 7. To mock; practise illusion.—

Is it fancy *plays* upon our eye-sight? *Shak.*

To game; to contend at some game.—

Charles, I will *play* no more to-night. *Shak.*

When lenity and cruelty *play* for kingdoms,
The gentler gamester is the soonest winner.

Shak.

Are these the wretches that we *played* at dice for?

Shak.

The clergyman *played* at whist.

Swift.

To do any thing trickish or deceitful.—

His mother *played* false with a smith. *Shak.*

Thou *playedst* most foully for't. *Shak.*

-Life is not long enough for a coquette to *play* her tricks in. *Spectator.* 10. To touch a musical instrument.—

Every thing that heard him *play,*

Ev'n the billows of the sea,

Hung their heads, and then lay by. *Shak.*

-One that hath a pleasant voice, and can *play* well on an instrument. *Ezekiel.*—Wherein doth our practice of fingering and *playing* with instruments in our cathedral churches differ from the practice of David? *Peacbam.*—

Clad like a country swain, he piped, he sung,

And *playing* drove his jolly troop along. *Dryd.*

Take thy harp and melt thy maid;

Play my friend! and charm the charmer.

Gramville.

-He applied the pipe to his lips, and began to *play* upon it. *Spectator.* 11. To operate; to act. Used of any thing in motion.—

John hath seized Arthur, and it cannot be,
That whilst warm life *plays* in that infant's veins,

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The misplac'd John should entertain

One quiet breath of rest.

Shak.

-My quiet cried out fire, and you brought out your buckets, and called for engines to *play* against it. *Dryden.*—The heart beats, the blood circulates, the lungs *play.* *Cheyne.* 12. To wanton; to move irregularly.—

The waving fedges *play* with wind. *Shak.*

This with exhilarating vapour bland

About their spirits *played.*

Milton.

In the streams that from the fountain *play,*

She washed her face.

Dryden.

The setting sun

Plays on their shining arms.

Addison.

Swords around him innocently *play.* *Pope.*

13. To personate a drama.—

A lord will hear you *play* to-night. *Shak.*

Ev'n kings but *play*; and when their part is done,

Some other, worse or better, mounts the throne.

Dryden.

14. To represent a standing character.—

Courts are theatres, where some men *play.*

Donne.

15. To act in any certain character.—Thus we *play* the fool with the time. *Shak.*—

Thou hast forced me,

Out of thy honest truth to *play* the woman.

Shak.

-She hath wrought folly to *play* the whore.

Deut. xxii. 21.—Let us *play* the men for our people.

2 *Sam. x. 12.*—Alphonse, duke of Ferrara, delighted himself only in turning and *playing* the joiner. *Peacbam.*—

'Tis possible these Turks may *play* the villains!

Denham.

-A man has no pleasure in proving that he has *played* the fool. *Collier.*

(2.) * *To PLAY. v. a.* 1. To put in action or motion; as, he *played* his cannon; the engines are *played* at a fire. 2. To use an instrument of music.—

He *plays* a tickling draw within his nose.

Gay.

3. To act a mirthful character.—

Nature here

Wantoned as in her prime, and *played* at will.

Milton.

4. To exhibit dramatically.—

Your honour's players, bearing your amendment,

Are come to *play* a pleasant comedy. *Shak.*

5. To act; to perform.—Doubt would fain have *played* his part in her mind. *Sidney.*

* *PLAYBOOK. n. f.* [*play and book.*] Book of dramatic compositions.—Yours was a match of common good liking, without any mixture of that ridiculous passion, which has no being but in *playbooks* and romances. *Swift.*

* *PLAYDAY. n. f.* [*play and day.*] Day exempt from tasks or work.—

I thought the life of every lady

Should be one continual *playday.*

Swift.

* *PLAYDEBT. n. f.* [*play and debt.*] Debt contracted by gaming.—There are multitudes of leases upon single lives, and *playdebts* upon joint lives. *Arbutnot.*—She has several *playdebts* on her hand,

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hand, which must be discharged very suddenly.
Spenser.

* **PLAYER.** *n. f.* [from *play*.] 1. One who plays. 2. An idler; a lazy person.—

Players in your housewifery. *Shak.*

3. Actor of dramatic scenes.—
Like *players* placed to fill a filthy stage.

Sidney.

—Certain pantomimi will represent the voices of *players* of interludes so to the life, as you would think they were those *players* themselves. *Bacon.*—
A *player*, if left of his auditory and their applause, would fain be out of heart. *Bacon.*—

Thine be the laurel then, support the stage;
Which do declines, that shortly we may see

Players and plays reduced to second infancy.

Dryden.

His muse had starved, had not a piece
unread,

And by a *player* bought, supplied her bread.

Dryden.

4. A mimic.

Thus fain did the *player* god. *Dryden.*

5. One who touches a musical instrument.—Seek out a man who is a cunning *player* on the harp. 1 *Sam.* xvi. 16. 6. A gamster. 7. One who acts in play in any certain manner.—The snake bit him tail by the tongue, which therewith began so to rankle and swell, that, by the time he had knocked this foul *player* on the head, his mouth was scarce able to contain it. *Garew.*

* **PLAYFELLOW.** *n. f.* [play and fellow.] Companion in amusement.—Never having a friend but *playfellows*, of whom, when he was weary, he could no otherwise rid himself than by killing them. *Sidney.*—

She seemed still back unto the land to look,
And her *playfellow's* aid to call. *Spenser.*

Your precious self had not then crossed the
eyes

Of my young *playfellow*. *Shak.*

Heart's discontent and four affliction

Be *playfellows* to keep you company! *Shak.*

—This was the play at which Nero staked 3219l.
38. 4d. upon every cast; where did he find *play-*
fellows? *Arbutnot.*

* **PLAYFUL.** *adj.* [play and full.] Sportive;
full of levity.—He is scandalized at youth for
being lively, and at childhood for being *playful*.
Addison.

* **PLAYGAME.** *n. f.* [play and game.] Play
of children.—That liberty alone gives the true
relish to their ordinary *playgames*. *Locke.*

(1.) * **PLAYHOUSE.** *n. f.* [play and house.]
House where dramatic performances are represented.—These are the youths that thunder at a
playhouse. *Shak.*—He hurries me from the *play-*
house; and scenes there to the bear-garden. *Still-*
ingfleet.—I am a sufficient theatre to myself of
ridiculous actions, without expecting company
either in a court or *playhouse*. *Dryden.*—

Shakespeare, whom you and every *playhouse*
bill

Stile the divine, the matchless, what you will,
For gain, not glory, winged his roving flight,
And grew immortal in his own despatch. *Pope.*

(2.) **PLAY-HOUSE.** See AMPHITHEATRE, and
THEATRE.

* **PLAYPLEASURE.** *n. f.* [play and pleasure.]
Idle amusement.—He taketh a kind of *playpleasure*
in looking upon the fortunes of others. *Bacon's*
Essays.

* **PLAYSOME.** *adj.* [play and some.] Wanton;
full of levity.

* **PLAYSOMENESS.** *n. f.* [from *playsome*.]
Wantonness; levity.

* **PLAYTHING.** *n. f.* [play and thing.] Toy;
thing to play with.—

O Castilio! thou hast caught

My foolish heart; and, like a tender child,

That trusts his *plaything* to another hand,

I fear its harm, and fain would have it back.

Orway.

—A child knows his nurse, and by degrees the
playthings of a little more advanced age. *Locke.*—

The servants should be hindered from making
court to them, by giving them fruit and *playthings*.
Locke.—

Would fortune calm her present rage,

And give us *playthings* for our age. *Prior.*

Allow him but the *plaything* of a pen,

He ne'er rebels or plots like other men. *Pope.*

* **PLAYWRIGHT.** *n. f.* [play and wright.] A
maker of plays.—Horace's rule for a play may as
well be applied to him as a *playwright*. *Pope.*

(1.) * **PLEA.** *n. f.* [plaid, old French.] 1. The
act or form of pleading. 2. Thing offered or
demanded in pleading.—

None can drive him from the envious *plea*

Of forfeiture of justice and his bond. *Shak.*

—Their respect of persons was expressed in judicial
process, in giving rash sentence in favour of the
rich, without ever staying to hear the *plea*, or
weigh the reasons of the poor's cause. *Kettlewell.*

3. Allegation.—

They tow'rd's the throne supreme,
Accountable, made haste, to make appear
With righteous *plea*, their utmost vigilance.

Milton.

4. An apology; an excuse.—

The fiend, with necessity,

The tyrant's *plea*, excused his devilish deeds.

Milton.

Thou determin'it weakness for no *plea*.

Milton.

No *plea* must serve; 'tis cruelty to spare.

Denham.

—Whoever argues in defence of absolute power in
a single person, though he offers the old plausible
plea, that it is his opinion, which he cannot help,
unless he be convinced, ought to be treated as the
common enemy of mankind. *Swift.*

(II.) **PLEA**, in law, is what either party alleges
for himself in court, in a cause there depending;
and in a more restrained sense, it is the defendant's
answer to the plaintiff's declaration. Pleas are
usually divided into **PLEAS OF THE CROWN** and
COMMON PLEAS.

i. **PLEAS, COMMON** (says Judge Blackstone), are
such suits as are carried on between common
persons in civil cases. These are of two sorts;
dilatory pleas, and *pleas to the action*.

1. **PLEAS, DILATORY**, are such as tend merely
to delay or put off the suit, by questioning the
propriety of the remedy, rather than by denying
the injury; pleas to the action are such as dispute
the

the very cause of suit. They are, 1. To the jurisdiction of the court; alleging, that it ought not to hold plea of this injury, it arising in Wales or beyond sea; or because the land in question is of ancient demesne, and ought only to be demanded in the lord's court, &c. 2. To the disability of the plaintiff, by reason whereof he is incapable to commence or continue the suit; as, that he is an alien enemy, outlawed, excommunicated, attainted of treason or felony, under a præmunire, not *in rerum natura* (being only a fictitious person), an infant, a feme covert, or a monk professed. 3. In abatement: which abatement is either of the writ, or the court, for some defect in one of them; as by misnaming the defendant, which is called a *misnomer*; giving him a wrong addition, as esquire instead of knight; or other want of form in any material respect. Or, it may be that the plaintiff is dead; for the death of either party is at once an abatement of the suit. These pleas to the jurisdiction, to the disability, or in abatement, were formerly very often used as mere dilatory pleas, without any foundation in truth, and calculated only for delay; but now by stat. 4 and 5 Ann. c. 16. no dilatory plea is to be admitted without affidavit made of the truth thereof, or some probable matter shewn to the court to induce them to believe it true. And with respect to the pleas themselves, it is a rule, that no exception shall be admitted against a declaration or writ, unless the defendant will in the same plea give the plaintiff a better; that is, shew him how it might be amended, that there may not be two objections upon the same account. All pleas to the jurisdiction conclude to the cognizance of the court; praying "judgment whether the court will have farther cognizance of the suit." Pleas to the disability conclude to the person; by praying "judgment, if the said A. the plaintiff ought to be answered?" And pleas in abatement (when the suit is by original) conclude to the writ or declaration; by praying "judgment of the writ, or declaration, and that the same may be quashed," *assetur*, made void, or abated: but if the action be by bill, the plea must pray "judgment of the bill," and not of the declaration; the bill being here the original, and the declaration only a copy of the bill. When these dilatory pleas are allowed, the cause is either dismissed from that jurisdiction, or the plaintiff is stayed till his disability be removed; or he is obliged to sue out a new writ, by leave obtained from the court, or to amend and new-frame his declaration. But when, on the other hand, they are over-ruled as frivolous, the defendant has judgment of *respondet ouster*, or to answer over in some better manner. It is then incumbent on him to plead.

2. PLEAS TO THE ACTION are to answer to the merits of the complaint. This is done by confessing or denying it. A confession of the whole complaint is not very usual; for then the defendant would probably end the matter sooner, or not plead at all, but suffer judgment to go by default. Yet sometimes, after tender and refusal of a debt, if the creditor harasses his debtor with an action, it then becomes necessary for the defendant to acknowledge the debt, and plead the tender; adding, that he has always been ready, *tout temps*

prêt, and is still ready, *encore prêt*, to discharge it: for a tender by the debtor and refusal by the creditor will in all cases discharge the costs, but not the debt itself; though in some particular cases the creditor will totally lose his money. But frequently the defendant confesses one part of the complaint (by a *cognovit actionem* in respect thereof), and traverses or denies the rest; in order to avoid the expence of carrying that part to a formal trial, which he has no ground to litigate. A species of this sort of confession is the *payment of money into court*: which is for the most part necessary upon pleading a tender, and is itself a kind of tender to the plaintiff; by paying into the hands of the proper officer of the court as much as the defendant acknowledges to be due, together with the costs hitherto incurred, in order to prevent the expence of any farther proceedings. This may be done upon what is called a *motion*; which is an occasional application to the court by the parties or their counsel, in order to obtain some rule or order of court, which becomes necessary in the progress of a cause; and it is usually grounded upon an *affidavit* (the perfect tense of the verb *affido*), being a voluntary oath before some judge or officer of the court; to evince the truth of certain facts, upon which the motion is grounded: though no such affidavit is necessary for payment of money into court. If, after the money is paid in, the plaintiff proceeds in his suit, it is at his own peril: for if he does not prove more due than is so paid into court, he shall be nonsuited and pay the defendant's costs; but he shall still have the money so paid in, for that the defendant has acknowledged to be his due. To this head may also be referred the practice of what is called a *set off*; whereby the defendant acknowledges the justice of the plaintiff's demand on the one hand; but on the other, sets up a demand of his own, to counterbalance that of the plaintiff, either in the whole or in part; as, if the plaintiff sues for L. 10 due on a note of hand, the defendant may set off L. 9 due to himself for merchandize sold to the plaintiff; and, in case he pleads such set-off, must pay the remaining balance into court. Pleas that totally deny the cause of complaint are either the general issue, or a special plea in bar. 1. The *general issue*, or general plea, is what traverses, thwarts, and denies at once, the whole declaration, without offering any special matter whereby to evade it. As in trespass either *vi et armis*, or on the case, "*non culpabilis*, not guilty;" in debt upon contract, "*nihil debet*, he owes nothing;" in debt on bond, "*non est factum*, it is not his deed;" or an *assumpsit*, "*non assumpsit*, he made no such promise." Or in real actions, "*nul tort*, no wrong done; *nul disseisin*, no disseisin;" and in a writ of right, the issue or issue is, that "the tenant has more right to hold than the demandant has to demand." These pleas are called the *general issue*, because, by importing an absolute and general denial of what is alleged in the declaration, they amount at once to an issue; by which is meant a fact affirmed on one side and denied on the other. 2. *Special pleas* in bar of the plaintiff's demands are very various, according to the circumstances of the defendant's case. As, in real actions, a general release or a fine; both of which may destroy

and bar the plaintiff's title. Or, in personal actions, an accord, arbitration, conditions performed, nonage of the defendant, or some other fact which precludes the plaintiff from his action. A justification is likewise a special plea in bar; as in actions of assault and battery, *son assault demesne*, that it was the plaintiff's own original assault; in trespass, that the defendant did the thing complained of in right of some office which warranted him so to do; or, in an action of slander, that the plaintiff is really as bad a man as the defendant said he was. Also a man may plead the statutes of limitation in bar; or the time limited by certain acts of parliament, beyond which no plaintiff can lay his cause of action. This, by the statute of 32 Hen. VIII. c. 2. in a writ of right is 60 years: in assises, writs of entry, or other possessory actions real, of the seisin of one's ancestors in lands; and either of their seisin, or one's own, in rents, suits, and services, 50 years: and in actions real for lands grounded upon one's own seisin or possession, such possession must have been within 30 years. By stat. 1 Mar. st. 2. c. 5. this limitation does not extend to any suit for avowsons. But by stat. 21 Jac. I. c. 2. a time of limitation was extended to the case of the king; viz. 60 years precedent to 19th Feb. 1623: but this becoming ineffectual by efflux of time, the same date of limitation was fixed by stat. 9 Geo. III. c. 16. to commence and be reckoned backwards, from the time of bringing any suit or other process to recover the thing in question; so that a possession for 60 years is now a bar even against the prerogative, in derogation of the ancient maxim, *Nullum tempus occurrit regi*. By another statute, 21 Jac. I. c. 16, 20 years is the time of limitation in any writ of formedon; and, by a consequence, 20 years is also the limitation in every action of ejectment; for no ejectment can be brought, unless where the lessor of the plaintiff is entitled to enter on the lands, and by stat. 21 Jac. I. c. 16, no entry can be made by any man, unless within 20 years after his right shall accrue. Also all actions of trespass (*quare clausum fragit*, or otherwise), detinue, trover, replevin, account, and case (except upon accounts between merchants), debt on simple contract, or for arrears of rent, are limited by the statute last mentioned to six years after the cause of action commenced: and actions of assault, menace, battery, mayhem, and imprisonment, must be brought within four years, and actions for words two years, after the injury committed; and by stat. 31 Eliz. c. 5. all suits, indictments, and informations, upon any penal statutes, where any forfeiture is to the crown, shall be sued within two years, and where the forfeiture is to a subject, within one year, after the offence committed, unless where any other time is specially limited by the statute. Lastly, by stat. 10 W. III. c. 14. no writ of error, *scire facias*, or other suit, shall be brought to reverse any judgment, fine, or recovery, for error, unless it be prosecuted within 10 years. The use of these statutes of limitation is to preserve the peace of the kingdom, and to prevent those innumerable perjuries which might ensue if a man were allowed to bring an action for any injury committed at any distance of time. Upon both these accounts the law therefore holds, that

interest reipublica ut sit finis litium: and upon the same principle the Athenian laws in general prohibited all actions where the injury was committed five years before the complaint was made. If therefore, in any suit, the injury or cause of action, happened earlier than the period expressly limited by law, the defendant may plead the statutes of limitations in bar: as upon an *assumpsit*, or promise to pay money to the plaintiff, the defendant may plead, *Non assumpsit infra sex annos*. He made no such promise within six years; which is an effectual bar to the complaint. An *esoppel* is likewise a special plea in bar; which happens where a man hath done some act, or executed some deed, which estops or precludes him from averring any thing to the contrary. As if a tenant for years (who hath no freehold) levies a fine to another person. Though this is void as to strangers, yet it shall work as an estoppel to the cognizor; for, if he afterwards brings an action to recover these lands, and his fine is pleaded against him, he shall thereby be estopped from saying, that he had no freehold at the time, and therefore was incapable of levying it. The conditions and qualities of a plea (which, as well as the doctrine of estoppels, will also hold equally, *mutatis mutandis*, with regard to other parts of pleading), are, 1. That it be single and containing only one matter; for duplicity begets confusion. But by stat. 4 and 5 Ann. c. 16. a man, with leave of the court, may plead two or more distinct matters or single pleas; as in an action of assault and battery, these three, Not guilty, *son assault demesne*, and the statute of limitations. 2. That it be direct and positive, and not argumentative. 3. That it have convenient certainty of time, place, and persons. 4. That it answer the plaintiff's allegations in every material point. 5. That it be so pleaded as to be capable of trial. Special pleas are usually in the affirmative, sometimes in the negative, but they always advance some new fact not mentioned in the declaration; and then they must be averred to be true in the common form:—"And this he is ready to verify."—This is not necessary in pleas of the general issue, those always containing a total denial of the facts before advanced by the other party, and therefore putting him upon the proof of them. See PLEADINGS, § 2.

ii. PLEAS OF THE CROWN are all suits in the king's name, or in the name of the attorney-general in behalf of the king, for offences committed against his crown and dignity, and against his peace; as treason, murder, felony, &c. See ARRAIGNMENT.

(III.) PLEA TO INDICTMENT, the defensive matter alleged by a criminal on his indictment: (see ARRAIGNMENT.) This is either, 1. A plea to the jurisdiction; 2. A demurrer; 3. A plea in abatement; 4. A special plea in bar; or, 5. The general issue. I. A plea to the *jurisdiction*, is where an indictment is taken before a court that hath no cognizance of the offence; as if a man be indicted for a rape at the sheriff's tourn, or for treason at the quarter sessions: in these or similar cases, he may except to the jurisdiction of the court, without answering at all to the crime alleged. II. A *demurrer* to the indictment, is incident to criminal cases, as well as civil, when the fact as alleged is allowed

allowed to be true, but the prisoner joins issue upon some point of law in the indictment by which he insists, that the fact, as stated, is no felony, treason, or whatever the crime is alleged to be. Thus, for instance, if a man be indicted for feloniously stealing a greyhound; which is an animal in which no valuable property can be had, and therefore it is not felony, but only a civil trespass to steal it; in this case the party indicted may demur to the indictment; denying it to be felony, though he confesses the act of taking it. Some have held, that if, on demurrer, the point of law be adjudged against the prisoner, he shall have judgment and execution, as if convicted by verdict. But this is denied by others, who hold, that in such case he shall be directed and received to plead the general issue, Not guilty, after a demurrer determined against him. Which appears the more reasonable, because it is clear, that if the prisoner freely discovers the fact in court, and refers it to the court whether it be felony or no; and upon the fact thus shown, it appears to be felony, the court will not record the confession, but admit him afterwards to plead not guilty. And this seems to be a case of the same nature, being for the most part a mistake in point of law, and in the conduct of his pleading; and, though a man by mispleading may in some cases lose his property, yet the law will not suffer him by such niceties to lose his life. However, upon this doubt, demurrers to indictments are seldom used: since the same advantages may be taken upon a plea of not guilty; or afterwards in arrest of judgment, when the verdict has established the fact. III. A plea in *abatement* is principally for a *wisdomer*, a wrong name, or a false addition to the prisoner. As, if James Allen, gentleman, is indicted by the name of *John Allen, esquire*, he may plead that he has the name of *James*, and not of *John*; and that he is a *gentleman*, and not an *esquire*. And, if either fact is found by a jury, then the indictment shall be abated, as writs and declarations may be in civil actions. But, in the end, there is little advantage accruing to the prisoner by means of these dilatory pleas: because, if the exception be allowed, a new bill of indictment may be framed, according to what the prisoner in his plea avers to be his true name and addition. For it is a rule, upon all pleas in abatement, that he who takes advantage of a flaw, must at the same time show how it may be amended. Let us therefore next consider a more substantial kind of plea, viz. IV. Special pleas in *bar*; which go to the merits of the indictment, and give a reason why the prisoner ought not to answer it at all, nor put himself upon his trial for the crime alleged. There are of 4 kinds: a former acquittal, a former conviction, a former attainder, or a pardon. There are many other pleas which may be pleaded in bar of an appeal: but these are applicable to both appeals and indictments. 1. First, the plea of *autrefois acquit*, or a former acquittal, is grounded on this universal maxim of the common law of England, that no man is to be brought into jeopardy of his life, more than once, for the same offence. And hence it is allowed as a consequence, that when a man is once fairly found not guilty upon any indictment, or other prosecution, be-

fore any court having competent jurisdiction of the offence, he may plead such acquittal in bar of any subsequent accusation for the same crime. 2. Secondly, the plea of *autrefois convict*, or a former conviction for the same identical crime, though no judgment was ever given, or perhaps will be, (being suspended by the benefit of clergy or other causes,) is a good plea in bar to an indictment. And this depends upon the same principle as the former, that no man ought to be twice brought in danger of his life for one and the same crime. 3. Thirdly, the plea of *autrefois attain*, or a former attainder, is a good plea in bar, whether it be for the same or any other felony. For wherever a man is attainted of felony, by judgment of death either upon a verdict or confession, by outlawry, or heretofore by abjuration, and whether upon an appeal or an indictment; he may plead such attainder in bar to any subsequent indictment or appeal, for the same or for any other felony. And this because, generally, such proceeding on a second prosecution cannot be to any purpose; for the prisoner is dead in law by the first attainder, his blood is already corrupted, and he hath forfeited all that he had: so that it is absurd and superfluous to endeavour to attain him a second time. Though to this general rule, as to all others, there are some exceptions; wherein, *cessante ratione, cessat et ipsa lex*. 4. Lastly, a pardon may be pleaded in bar; as at once destroying the end and purpose of the indictment, by remitting that punishment which the prosecution is calculated to inflict. There is one advantage that attends pleading a pardon in bar, or in arrest of judgment, before sentence is past; which it gives by much the preference to pleading it after sentence or attainder. This is, that by stopping the judgment, it stops the attainder, and prevents the corruption of the blood: which, when once corrupted by attainder, cannot afterwards be restored otherwise than by act of parliament. V. The general issue, or plea of not guilty, upon which plea alone the prisoner can receive his final judgment of death. In case of an indictment of felony or treason, there can be no special justification put in by way of plea. As, on an indictment for murder, a man cannot plead that it was in his own defence against a robber on the highway, or a burglar; but he must plead the general issue, Not guilty, and give this special matter in evidence. For (besides that these pleas do in effect amount to the general issue; since, if true, the prisoner is most clearly not guilty) as the facts in treason are said to be done *proditore et contra ligentiam suae debiti*; and, in felony, that the killing was done *felonice*; these charges, of a traitorous or felonious intent, are the points and very *gist* of the indictment, and must be answered directly, by the general negative, *Not guilty*; and the jury upon the evidence will take notice of any defensive matter, and give their verdict accordingly as effectually as if it were or could be specially pleaded. So that this is, upon all accounts, the most advantageous plea for the prisoner. When the prisoner hath thus pleaded not guilty, *non culpabilis*, or *nient culpable*, which was formerly used to be abbreviated upon the minutes, thus, *Nm.* (or *nient*) *cul.* the clerk of the assize, or clerk of arraigns, on behalf of the crown replies, that

that the prisoner is guilty, and that he is ready to prove him so. This is done by two monosyllables in the same spirit of abbreviation *cul. prit*: which signifies first that the prisoner is guilty; (*cul. culpable, or culpabilis*;) and then that the king is ready to prove him so, (*prit, præsto sum, or paratus, verificare.*) By this replication the king and the prisoner are therefore at issue: for when the parties come to a fact which is affirmed on one side and denied on the other, then they are said to be *at issue* in point of fact: which is evidently the case here, in the plea of *non. cul.* by the prisoner; and the replication of *cul.* by the clerk. How the courts came to express a matter of this importance in so odd and obscure a manner, can hardly be pronounced with certainty. It may perhaps, however, be accounted for by supposing, that these were at first short notes, to help the memory of the clerk, and remind him what he was to reply; or else it was the short method of taking down in court, upon the minutes, the replication and averment; *cul. prit*: which afterwards the ignorance of succeeding clerks adopted for the very words to be by them spoken: as the ignorance of the criers has led them to abuse two old French terms; viz. *Oyez, l. e. Hear ye!* which they commonly pronounce most absurdly *O Yes!* and *Countez*, when a jury are sworn, instead of which the officer says *Count these*. But however it may have arisen, the joining of issue seems to be clearly the meaning of this obscure expression; which has puzzled our most ingenious etymologists; and is commonly understood as if the clerk of the arraigns, immediately on plea pleaded, had fixed an opprobrious name on the prisoner, by asking him, "*culprit*, how wilt thou be tried?" for immediately upon issue joined it is inquired of the prisoner, by what trial he will make his innocence appear. This form has at present reference to appeals and approvements only, wherein the appellee has his choice, either to try the accusation by *BATTLE* or by *JURY*. But upon indictments, since the abolition of *ORDEAL*, there can be no other trial but by jury, *per pais*, or by the country: and therefore, if the prisoner refuses to put himself upon the inquest in the usual form, that is, to answer that he will be tried by God and the country, if a commoner; and, if a peer, by God and his peers; the indictment, if in treason, is taken *pro confesso*; and the prisoner, in cases of felony, is judged to stand mute, and, if he perseveres in his obstinacy, shall now be convicted of the felony. When the prisoner has thus put himself upon his trial, the clerk answers in the humane language of the law, which always hopes that the party's innocence rather than his guilt may appear, "God send thee a good deliverance." And then they proceed, as soon as conveniently may be, to the trial. See *TRIAL*.

* *To PLEACH. v. a. [pleffer, Fr.]* To bend; to interweave. A word not in use.—

Would'st thou be window'd in great Rome,
and see

Thy master thus, with *pleacht* arms, bending down
His corrigible neck? *Shak.*

Steal into the *pleached* bower. *Shak.*

(1.) * *To PLEAD. v. n. [plaidier, Fr.]* 1. To argue before a court of justice.—

To his accusations

He *pleaded* still not guilty. *Shak.*

—O that one might *plead* for a man with God,
as a man *pleadeth* for his neighbour. *Job, xvi.*

21.— Let others govern or defend the state,
Plead at the bar or manage a debate. *Granv.*

—Lawyers and divines write down short notes, to
preach or *plead. Watts.* 2. To speak in an argu-
mentative or persuasive way for or against; to rea-
son with another.—

To *plead* for that which I would not obtain. *Shak.*

—Who is he that will *plead* with me? *Job.*—

If nature *plead* not in a parent's heart,

Pity my tears, and pity her desert. *Dryden.*

—It must be no ordinary way of reasoning, in a
man that is *pleading* for the natural power of kings.
Locke. 3. To be offered as a plea.—

Since you can love, and yet your error see,
The same relentless power may *plead* for me. *Dryden.*

(2.) * *To PLEAD. v. a. 1.* To defend; to dis-
cuss.—

Our swords shall *plead* it in the field. *Shak.*

2. To allege in pleading or argument.—They
could not justly *plead* law of nations, for they
were not lawful enemies. *Spenser.*—They will *plead*
against me thy reproach. *Job, xix. 5.* 3. To offer
as an excuse.—I will neither *plead* my age nor
sickness, in excuse of faults. *Dryden.*

* *PLEADABLE. adj.* [from *plead*.] Capable to
be alleged in plea.—This privilege is *pleadable* at
law. *Dryden.*

* *PLEADER. n. f.* [*plaidier, Fr.* from *plead*.]
1. One who argues in a court of justice.—

The brief with weighty crimes was charg'd,
On which the *pleader* much enlarg'd. *Swift.*

2. One who speaks for or against.—

If you

Would be your country's *pleader*, your good
tongue

Might stop our countryman. *Shak.*

So fair a *pleader* any cause may gain. *Dryd.*

(1.) * *PLEADING. n. f.* [from *plead*.] Act or
form of pleading.—

If the heavenly folk should know

These *pleadings* in the court below. *Swift.*

(2.) *PLEADINGS*, in law, are the mutual alter-
cations between the plaintiff and defendant. (See
PROCESS, SUIT, and WRIT.) They form the
third part or stage of a fact; and at present are
set down and delivered into the proper office in
writing, though formerly they were usually put
in by their council *ore tenus*, or *viva voce*, in
court, and then minuted down by the chief clerks
or prothonotaries; whence, in old law French,
the pleadings are frequently denominated the *pa-
rol*. The first of these is the *declaration, narratio*,
or *count*, anciently called the *tale*; in which the
plaintiff sets forth his cause of complaint at length:
being indeed only an amplification or exposition
of the original writ upon which his action is
founded, with the additional circumstances of time
and place, when and where, the injury was
committed. In *local* actions, (says judge Black-
stone), where the possession of land is to be re-
covered, or damages for an actual trespass, or for
waste,

waste, &c. affecting land, the plaintiff must lay his declaration or declare his injury to have happened in the very county and place that it really did happen; but in *transitory* actions, for injuries that might have happened anywhere, as debt, detinue, slander, and the like, the plaintiff may declare in what county he pleases, and then the trial must be in that county in which the declaration is laid. Though, if the defendant will make affidavit that the cause of action, if any, arose not in that but another county, the court will direct a change of the *venue* or *visne* (that is, the *vicinia* or neighbourhood in which the injury is declared to be done), and will oblige the plaintiff to declare in the proper county. For the statute 6 Ric. II. c. 2. having ordered all writs to be laid in their proper counties, this, as the judges conceived, empowered them to change the *venue*, if required, and not to insist rigidly on abating the writ: which practice began in the reign of James I. And this power is discretionally exercised, so as not to cause but prevent a defect of justice. Therefore the court will not change the *venue* to any of the four northern counties previous to the spring circuit; because there the assizes are holden only once a-year, at the time of summer circuit. And it will sometimes remove the *venue* from the proper jurisdiction (especially of the narrow and limited kind), upon a suggestion, duly supported, that a fair and impartial trial cannot be had therein. It is generally usual, in actions upon the case, to set forth several cases, by different counts in the same declaration; so that if the plaintiff fails in the proof of one, he may succeed in another. As in an action on the case upon an *assumpsit* for goods sold and delivered, the plaintiff usually counts or declares, first, upon a settled and agreed price between him and the defendant; as that they bargained for 20l.: and left he should fail in the proof of this, he counts likewise upon a *quantum valebant*; that the defendant bought other goods, and agreed to pay him so much as they were reasonably worth: and then avers that they were worth other 20l. and so on in three or four different shapes; and at last concludes with declaring, that the defendant had refused to fulfil any of these agreements, whereby he is endangered to such a value. And if he proves the case laid in any one of his counts, though he fails in the rest, he shall recover proportionable damages. This declaration always concludes with these words, "and thereupon he brings suit," &c. *inde producit secliam*, &c. By which words, *suit* or *seclia*, (a *sequendo*) were anciently understood the witnesses or followers of the plaintiff. For in former times, the law would not put the defendant to the trouble of answering the charge till the plaintiff had made out at least a probable case. But the actual production of the *suit*, *seclia*, or *followers*, is now antiquated, and hath been totally disused ever since the reign of Edward III. though the form still continues. At the end of the declaration are added also the plaintiff's common pledges of prosecution, John Doe and Richard Roe; which, as elsewhere observed, (See *Writ*), are now mere names of form; though formerly they were of use to answer to the king for the

amercement of the plaintiff, in case he were nonsuited, barred of his action, or had a verdict and judgment against him. For if the plaintiff neglects to deliver a declaration for two terms after the defendant appears, or is guilty of other delays or defaults against the rules of law in any subsequent stage of the action, he is adjudged not to follow or pursue his remedy as he ought to do; and thereupon a *nonsuit*, or *non prosequitur*, is entered, and he is said to be *non pros'd*. And for thus deserting his complaint, after making a false claim or complaint (*pro falso clamore suo*), he shall not only pay costs to the defendant, but is liable to be amerced to the king. A *retraxit* differs from a *nonsuit*, in that the one is negative and the other positive: the *nonsuit* is a default and neglect of the plaintiff, and therefore he is allowed to begin his suit again upon payment of costs; but a *retraxit* is an open and voluntary renunciation of his suit in court; and by this he for ever loses his action. A *discontinuance* is somewhat similar to a *nonsuit*; for when a plaintiff leaves a chasm in the proceedings of his cause, as by not continuing the process regularly from day to day, and time to time, as he ought to do, the suit is discontinued, and the defendant is no longer bound to attend; but the plaintiff must begin again, by suing out a new original, usually paying costs to his antagonist. When the plaintiff hath stated his case in the declaration, it is incumbent on the defendant, within a reasonable time, to make his defence, and to put in a plea; or else the plaintiff will at once recover judgment by *default*, or *nihil dicit*, of the defendant. Defence, in its true legal sense, signifies not a justification, protection, or guard, which is now its popular signification; but merely an *opposing* or *denial* (from the French verb *defendre*) of the truth or validity of the complaint. It is the *contestatio litis* of the civilians: a general assertion that the plaintiff hath no ground of action; which assertion is afterwards extended and maintained in his plea. Before defence made, if at all, cognizance of the suit must be claimed or demanded; when any person or body corporate hath the franchise, not only of holding pleas within a particular limited jurisdiction, but also of the cognizance of pleas; and that either without any words exclusive of other courts, which entitles the lord of the franchise, whenever any suit that belongs to his jurisdiction is commenced in the courts of Westminster, to demand the cognizance thereof; or with such exclusive words, which also entitle the defendant to plead to the jurisdiction of the court. Upon this claim of cognizance, if allowed, all proceedings shall cease to the superior court, and the plaintiff is left at liberty to pursue his remedy in the special jurisdiction. As, when a scholar or other privileged person of the universities of Oxford or Cambridge is impleaded in the courts at Westminster, for any cause of action whatsoever, unless upon a question of freehold. In these cases, by the charter of those learned bodies, confirmed by act of parliament, the chancellor, or vice-chancellor, may put in a claim of cognizance; which, if made in due time and form, and with due proof of the facts alleged, is regularly allowed by the courts. It must be demanded before full defence is made

or

or imparlance prayed; for these are a submission to the jurisdiction of the superior court, and the delay is the *laethes* in the lord of the franchise; and it will not be allowed if it occasions a failure of justice, or if an action be brought against the person himself who claims the franchise, unless he hath also a power in such case of making another judge. After defence made, the defendant must put in his plea; but, before he defends, if the suit is commenced by *copias* or *latitat*, without any special original, he is entitled to demand one *imparlance*, or *licentia loquendi*; and may, before he pleads, have more granted by consent of the court, to see if he can end the matter amicably, without farther suit, by talking with the plaintiff; a practice which is supposed to have arisen from a principle of religion, in obedience to that precept of the gospel, "agree with thine adversary quickly, whilst thou art in the way with him." And it may be observed that this gospel precept has a plain reference to the Roman law of the XII tables, which expressly directed the plaintiff and defendant to make up the matter while they were in the way, or going to the prætor; in *via rem uti pacent orato*. There are also many other previous steps which may be taken by a defendant before he puts in his plea. He may, in real actions, demand a view of the thing in question, to ascertain its identity and other circumstances. He may crave *oyer* of the writ, or of the bond, or other specialty upon which the action is brought; that is, to hear it read, to him; the generality of defendants in the times of ancient simplicity being supposed incapable to read it themselves; whereupon the whole is entered *verbatim* upon the record; and the defendant may take advantage of any condition or other part of it, not stated in the plaintiff's declaration. In real actions also the tenant may pray in *aid*, or call for the assistance of another, to help him to plead, because of the feebleness or imbecility of his own estate. Thus, a tenant for life may pray in aid of him that hath the inheritance in remainder or reversion; and an incumbent may pray in aid of the patron and ordinary; that is, that they shall be joined in the action, and help to defend the title. *Voucher* also is the calling in of some person to answer the action, that hath warranted the title to the tenant or defendant. This is made still use of in the form of common recoveries, which are grounded on the writ of entry; a species of action that relies chiefly on the weakness of the tenant's title, who therefore vouches another person to warrant it. If the vouchee appears, he is made defendant instead of the voucher; but if he afterwards makes default, recovery shall be had against the original defendant; and he shall recover an equivalent in value against the deficient vouchee. In assizes, indeed, where the principal question is, whether the demandant or his ancestors were or were not in possession till the ouster happened, and the title of the tenant is little if at all discussed, there no voucher is allowed, but the tenant may bring a writ of *warrantia chartæ* against the warrantor, to compel him to assist him with a good plea or defence, or else to render damages and the value of the land, if recovered against the tenant. In many real actions also, brought by or against an

infant under the age of 21 years, and also in actions of debt brought against him, as heir to any deceased ancestor, either party may suggest the nonage of the infant, and pray that the proceedings may be deferred till his full age, or, in the legal phrase, that the infant may have his age, and that the *parol* may *demur*, that is, that the pleadings may be staid; and then they shall not proceed till his full age, unless it be apparent that he cannot be prejudiced thereby. But by the statutes of Westm. 1. 3. Edw. 1. c. 46. and of Gloucester, 6 Edw. 1. c. 2. in writs of entry *sur disseisin* in some particular cases, and in actions *au cesteval* brought by an infant, the parol shall not demur; otherwise he might be deforced of his whole property, and even want a maintenance till he came of age. So, likewise, in a writ of dower, the heir shall not have his age; for it is necessary that the widow's claim be immediately determined, else she may want a present subsistence. Nor shall an infant patron have it in a *quare impedit*, since the law holds it necessary and expedient that the church be immediately filled. When these proceedings are over, the defendant must then put in his excuse or plea. See PLEA. No man is allowed to plead specially such a plea as amounts only to the general issue, or a total denial of the charge; but in such case he must plead the general issue in terms, whereby the whole question is referred to a jury. But if the defendant, in an assize or action of trespass, wish to refer the validity of his title to the court rather than the jury, he may state his title specially; and give colour to the plaintiff, or suppose him to have an appearance or colour of title. As if his own true title is, that he claims by feoffment with livery from A, by force of which he entered on the lands in question; he cannot plead this by itself, as it amounts to no more than the general issue. But he may allege this specially, provided he goes farther, and says, that the plaintiff claiming by colour of a prior deed of feoffment, without livery, entered; upon whom he entered; and may then refer to the judgment of the court which of these two titles is the best in point of law. When the plea of the defendant is thus put in, if it does not amount to a total contradiction of the declaration, but only evades it, the plaintiff may plead again, and reply to the defendant's plea. Either traversing it, *i. e.* totally denying it; as if, on an action of debt upon bond, the defendant pleads *solvit ad diem*, that he paid the money when due; here the plaintiff in his replication may totally traverse this plea, by denying that the defendant paid it; or he may allege new matter in contradiction to the defendant's plea; as when the defendant pleads no award made, the plaintiff may reply, and set forth an actual award, and assign a breach; or the replication may confess and avoid the plea, by some new matter or distinction; as in an action for trespassing upon land whereof the plaintiff is seised, if the defendant shows a title to the land by descent, and that therefore he had a right to enter, and gives colour to the plaintiff, the plaintiff may either traverse and totally deny the fact of the descent; or he may confess and avoid it, by replying, that true it is that such descent happened, but that, since the descent, the defendant himself

demised

demised the lands to the plaintiff for term of life. To the replication the defendant may *rejoin*, or put in an answer called a *rejoinder*. The plaintiff may answer the rejoinder by a *sur-rejoinder*; upon which the defendant may *rebut*, and the plaintiff answer him by a *sur-rebutter*. Which pleas, replications, rejoinders, sur-rejoinders, rebutters, and sur-rebutters, answer to the *exceptio*, *replicatio*, *duplicatio*, *triplicatio*, and *quadruplicatio*, of the Roman laws. The whole of this process is denominated the *pleading*; in the several stages of which it must be carefully observed, not to depart or vary from the title or defence which the party has once insisted on. For this, which is called a *departure* in pleading, might occasion endless altercation. Therefore the replication must support the declaration, and the rejoinder must support the plea, without departing out of it. As in the case of pleading, no award made in consequence of a bond of arbitration, to which the plaintiff replies, setting forth an actual award; now, the defendant cannot rejoin that he hath performed this award, for such rejoinder would be an entire departure from his original plea, which alleged that no such award was made; therefore he has now no other choice but to traverse the fact of the replication, or else to demur upon the law of it. Again, every plea must be simple, entire, connected, and confined to one single point; it must never be entangled with a variety of distinct independent answers to the same matter; which must require as many different replies, and introduce a multitude of issues upon one and the same dispute. For this would often embarrass the jury, and sometimes the court itself, and at all events would greatly enhance the expence of the parties. Yet it frequently is expedient to plead in such a manner as to avoid any implied admission of a fact which cannot with propriety or safety be positively affirmed or denied. And this may be done by what is called a *protestation*; whereby the party interposes an oblique allegation or denial of some fact, protesting that such a matter does or does not exist; and at the same time avoiding a direct affirmation or denial. Sir Edward Coke hath defined a protestation to be, "an exclusion of a conclusion; for the use of it is, to save the party from being concluded with respect to some fact or circumstance which cannot be directly affirmed or denied without falling into duplicity of pleading; and which yet, if he did not thus enter his protest, he might be deemed to have tacitly waived or admitted. So, if a defendant, by way of inducement to the point of his defence, alleges a particular mode of seisin or tenure which the plaintiff is unwilling to admit, and yet desires to take issue on the principal point of the defence, he must deny the seisin or tenure by way of protestation, and then traverse the defensive matter. So, lastly, if an award be set forth by the plaintiff, and he can assign a breach in one part of it, and yet is afraid to admit the performance of the rest of the award, or to aver in general a non-performance of any part of it, lest something should appear to have been performed; he may save to himself any advantage he might hereafter make of the general non-performance, by alleging

that by protestation, he can plead only the non-payment of the money. In any stage of the pleadings, when either side advances or affirms any new matter, he usually avers it to be true; "and this he is ready to verify." On the other hand, when either side traverses or denies the facts pleaded by his antagonist, he usually tenders an *issue*, as it is called; the language of which is different according to the party by whom it is tendered; for if the traverse or denial comes from the defendant, the issue is tendered in this manner, "And of this he puts himself upon the country," thereby submitting himself to the judgment of his peers; but if the traverse lies upon the plaintiff, he tenders the issue or prays the judgment of the peers against the defendant in another form; thus, "and this he prays may be inquired of by the country." But if either side pleads a special negative plea, not traversing or denying any thing that was before alleged, but disclosing some new negative matter; as where the suit is on a bond conditioned to perform an award, and the defendant pleads negatively that no award was made; he tenders no issue upon this plea, because it does not yet appear whether the fact will be disputed, the plaintiff not having yet asserted the existence of any award; but when the plaintiff replies, and sets forth an actual specific award, if then the defendant traverses the replication, and denies the making of any such award, he then, and not before, tenders an issue to the plaintiff. For when in the course of pleading they come to a point which is affirmed on one side and denied on the other, they are then said to be *at issue*; all their debates being at last contracted into a single point, which must now be determined either in favour of the plaintiff or of the defendant. See *ISSUE*, § 1. and 2.

(1.) * *PLEASANCE*. *n. f.* [*pleasant*, French.] Gaiety; pleasantry; merriment. Obsolete.—

The lovely *pleasance*: and the lofty pride.

Spenser.

Wanting grace in uttering of the same,
That turned all her *pleasance* to a scoffing game.

Spenser.

—Oh that we should with joy, *pleasance*, revel,
and applause, transform ourselves into beasts!

Shak.
(2.) *PLEASANCE*, in geography, a village adjacent to Edinburgh, being part of its suburbs, leading S. from the foot of the Cowgate and of St Mary's Wynd to Dalkeith, &c.

(1.) * *PLEASANT*. *adj.* [*plaisant*, French.] 1. Delightful; giving delight.—

The gods are just, and of our *pleasant* vices
Make instruments to scourge us. *Shak.*

What most he should dislike, seems *pleasant*
to him;

What like, offensive, *Shak.*
—How *pleasant* it is for brethren to dwell in
unity! *Psalms.*—

Verdure clad
Her universal face with *pleasant* green.

Milton.

2. Grateful to the senses.—
Fruits of palm-tree *pleasantest* to thirst.

Milton.

4. Good humoured; cheerful.—

P p p p In

In all thy humours, whether grave or mellow,
Thou'rt such a touchy, tefty, *pleasant* fellow.

Addison.

4. Gay; lively; merry.—Let neither the power nor quality of the great, or the wit of the *pleasant*, prevail with us to flatter the vices, or applaud the prophaneness of wicked men. *Rogers.* 5. Trifling; adapted rather to mirth than use.—They, who would prove their idea of infinite to be positive, seem to do it by a *pleasant* argument, taken from the negation of an end, which being negative, the negation of it is positive.

(2.) PLEASANT BAY. and } a bay and river of
(3.) PLEASANT RIVER. } the United States,
in Maine. The river runs into the bay; in Lon.
67. 40. W. Lat. 44. 35. N.

* PLEASANTLY. *adv.* [from *pleasant*.] 1. In such a manner as to give delight. 2. Gayly; merrily; in good humour.—King James was wont *pleasantly* to say, that the duke of Buckingham had given him a secretary who could neither write nor read. *Clarendon.* 3. Lightly; ludicrously.—Eustathius is of opinion, that Ulysses speaks *pleasantly* to E'p'nor. *Broome.*

* PLEASANTNESS. *n. f.* [from *pleasant*.] 1. Delightfulness; state of being pleasant.—Doth not the *pleasantness* of this place carry in itself sufficient reward? *Sidney.* 2. Gaiety; cheerfulness; merriment.—It was refreshing, but composed, like the *pleasantness* of youth tempered with the gravity of age. *South.*—He would fain put on some *pleasantness*. *Tillotson.*

* PLEASANTRY. *n. f.* [*plaisanterie*, French.] 1. Gaiety; merriment.—The harshness of reasoning is not a little softened and smoothed by the infusions of mirth and *pleasantry*. *Addison.*—Such kinds of *pleasantry* are disingenuous in criticism. *Addison.* 2. Sprightly saying; lively talk.—The grave abound in *pleasantries*, the dull in repartees. *Sp'ator.*

(1.) * To PLEASE. *v. a.* [*placere*, Latin; *plaire*, French.] 1. To delight; to gratify; to humour.—They *please* themselves in the children of strangers. *Isaiah ii.* 6. A whistling wind, or a *pleasing* fall of water running violently. *Wisdom*, xvii. 18.

Thou can'st not be so *pleased* at liberty,
As I shall be to find thou dar'st be free. *Dryd.*
Leave such to trifle with more grace and ease,
Whom folly *pleases*, and whose follies *pleas*.

Pope.

2. To satisfy; to content.—

Establish him in his true sense again,
And I will *please* you what you will demand.

Shak.

What next I bring shall *please*

Thy wish exactly to thy heart's desire. *Milton.*

3. To obtain favour from; to be pleased with, is to approve; to favour.—This is my beloved son, in whom I am well *pleased*. *Matt.*—I have seen thy face, and thou wast *pleased* with me. *Gen.*

Who can *please* him long? *Milton.*

4. To be PLEASED. To like. A word of ceremony.—Many of our most skilful painters were *pleased* to recommend this author to me. *Dryden.*

(2.) * To PLEASE. *v. n.* 1. To give pleasure.—

What *pleasing* seemed, for her now *pleases*
more. *Milton.*

I found something that was more *pleasing* in them,
than my ordinary productions. *Dryden.* 2. To gain

approbation.—Their wine offerings shall not be *pleasing* unto him. *Hofea.* 3. To like; to chuse.—Spirits freed from mortal laws, with ease

Assume what sexes and what shapes they *please*.

Pope.

4. To condescend; to comply. A word of ceremony.—

Please you, lords,

In sight of both our battles we may meet. *Shak.*
—The first words that I learnt were, to express my desire that he would *please* to give me my liberty. *Swift.*

* PLEASEMAN. *n. f.* [*please* and *man*.] A pickthank; an officious fellow.—

Some carry-tale, some *pleaseman*, some slight zany,

That knows the trick to make my lady laugh,
Told our intents. *Shak.*

* PLEASER. *n. f.* [from *please*.] One that courts favour.

PLEASING, ART OF. See POLITENESS.

* PLEASINGLY. *adv.* [from *pleasing*.] In such a manner as to give delight.—*Pleasingly* troublesome thought and remembrance have been to me since I left you. *Suckling.*

Thus to herself she *pleasingly* began. *Milton.*
—The end of the artist is *pleasingly* to deceive the eye. *Dryden.*

He gains all points, who *pleasingly* confounds,
Surprises, varies, and conceals the bounds.

Pope.

* PLEASINGNESS. *n. f.* [from *pleasing*.] Quality of giving delight.

* PLEASURABLE. *adj.* [from *pleasure*.] Delightful; full of pleasure.—Planting of orchards is very profitable, as well as *pleasurable*. *Bacon.*—It affords a *pleasurable* habitation in every part. *Brown.*

Each mutually correcting each, create

A *pleasurable* medley. *Philips.*

Our ill-judging thought

Hardly enjoys the *pleasurable* taste. *Prior.*

(1.) * PLEASURE. *n. f.* [*plaisir*, French.] 1. Delight; gratification of the mind or senses.—*Pleasure*, in general, is the consequent apprehension of a suitable object, suitably applied to a rightly disposed faculty. *South.*—A cause men's taking *pleasure* in the sins of others is that poor-spiritedness that accompanies guilt. *South.*

Her name with *pleasure* once she taught the
shore,

Now Daphne's dead, and *pleasure* is no more.

Pope.

2. Loose gratification.—

Convey your *pleasures* in a spacious plenty,
And yet seem cold. *Shak.*

—Behold yon dame does shake the head to hear
of *pleasure*'s name. *Shak.*

Not sunk in carnal *pleasure*. *Milton.*

3. Approbation.—The Lord taketh *pleasure* in them that fear him. *Psalms.* 4. What the witt dictates.—Use your *pleasure*; if your love do not persuade you to come, let not my letter. *Shak.* He will do his *pleasure* on Babylon. *Isaiah xlviii.* 5. Choice; arbitrary will.—Arbitrary calculations, and such as vary at *pleasure*. *Brown.*

Upon the rest at *pleasure* he descends. *Dryd.*
Raise tempests at your *pleasure*. *Dryden.*

—We

—We can at *pleasure* move several parts of our bodies. *Locke*.—All the land was disposed by them according to their *pleasure*. *Arbutnot*.

(2.) PLEASURE. See HAPPINESS and MORAL PHILOSOPHY, Part II. *Self*. II. To what is already said on this subject under these articles, we shall only add a single reflection or two upon *intellectual pleasure*. "If we compare (says M. Voltaire) the pleasures of sense with those which are purely intellectual, we shall find that the latter are infinitely superior to the former, as they may be enjoyed at all times and in every situation of life. What are the pleasures of the table, says Cicero, of gaming, and of women, compared with the delights of study? This taste increases with age, and no happiness is equal to it. Without knowledge and study, says Cato, life is almost the image of death. The pleasures of the soul are such, that it is frequent to see men preserve their gaiety during their whole life, notwithstanding a weak, diseased, and debilitated body. SCARRON was an example of this."—There are pleasures on which the mind may securely rest, which elevate a man above himself, dignify his nature, fix his attention on celestial objects, and render him fit to enjoy them. These are to be found in true religion, which procures for its followers inexpressible happiness in a better world, and, in the present state of existence, affords a consolation under every misfortune.

* To PLEASURE. *v. a.* [from the noun.] To please; to gratify. This word, though supported by good authority, is, I think, inelegant.—

Things, thus set in order,

Shall further thy harvest, and *pleasure* thee best.

Tupper.

—I count it one of my greatest afflictions that I cannot *pleasure* such an honourable gentleman.

Bak.

If what pleases him, shall *pleasure* you,

Fight closer.

Shak.

—When the way of *pleasuring* and displeasuring is by the favourite, it is impossible any should be overgreat. *Bacon*.—

Now, the birds rural music too

Is as melodious and as free,

As if they sung to *pleasure* you.

Cowley.

—Nothing is difficult to love; it will make a man forsake his own inclinations to *pleasure* them whom he loves. *Tillotson*.

* PLEASUREFUL. *adj.* [pleasure and full.] Pleasant; delightful. Obsolete.—This country hath been reputed a very commodious and *pleasureful* country. *Abbot*.

PLEAUX, a town of France, in the dep. of Cantal, 7½ miles SW. of Mauriac, and 25 NW. of Aurillac.

(1.) * PLEBEIAN. *n. f.* [plebeian, Fr. *plebeins*, Lat.] One of the lower people.—

You're *plebeians*, if they be senators. *Bak.*

—Upon the least intervals of peace, the quarrels between the nobles and the *plebeians* would revive. *Swift*.

(2.) * PLEBEIAN. *adj.* 1. Popular; consisting of mean persons.—As swine are to gardens, so are tumults to parliaments, and *plebeian* concurs to public councils. *King Charles*. 2. Belonging to the lower ranks.—

In shew *plebeian* angel militant
Of lowest order.

Milton.

3. Vulgar; low; common.—To apply notions philosophical to *plebeian* terms; or to say, where the notions cannot fitly be reconciled, that there wanteth a term or nomenclature for it, as the ancients used, they be but shifts of ignorance. *Bacon*.—The differences of mouldable and not mouldable, scissible and not scissible, are *plebeian* notions. *Bacon*.—

A queen! and own a base *plebeian* mind.

Dryden.

(3.) PLEBEIANS. The ancient Romans were divided into patricians, and plebeians. The distinction was made by Romulus the founder of the city; who confined all dignities senatorial, civil, military, and sacerdotal, to the rank of patricians. But to prevent the seditions which such a distinction might produce through the pride of the higher order, and the envy of the lower, he endeavoured to engage them to one another by reciprocal ties and obligations. Every plebeian was allowed to choose, out of the body of the patricians, a protector, who should be obliged to assist him with his interest, and substance, and to defend him from oppression. These protectors were called *patrons*; the protected *clients*. (See CLIENT, § 2, and PATRON, § 3.) But though the attachment between the patrons and clients continued inviolate for above 600 years, yet during the greater part of the republic, the struggle between the Patricians and Plebeians was frequent and violent. See ROME.

PLECH, a town of Franconia, in Culmbach, 21 miles S. of Pegnitz.

PLECHATEL, a town of France, in the dep. of Ille and Vilaine; 4½ miles NW. of Bain, and 13 S. of Rennes.

PLECTRANTHUS, in botany: a genus of the gymnospermia order, belonging to the didymia class of plants; and in the natural method ranking under the 42d order, *Verticillate*. The calyx is monophyllous, short, and bilabiate; the upper lip of which is large, oval, and bent upwards; the inferior lip is quadrifid, and divided into two laciniae: the corolla is monopetalous, ringent, and turned back; the labiae look different ways, and from the base of the tube there is a nectarium like a spur: the filaments are in a declining situation, with simple anthers: the stylus filiform; the stigma bifid. It has four seeds covered only by the calyx. There are two species, viz.

1. PLECTRANTHUS FRUTICOSUS, a native of the Cape of Good Hope. It flowers from June to September.

2. PLECTRANTHUS PUNCTATUS, a native of Africa. It flowers from January to May.

PLECTRONIA, in botany, a genus of the monogynia order, belonging to the pentandria class of plants.

PLEDELIAC, a town of France, in the dep. of the North Coasts, 5 miles E. of Lamballe, and 13 W. of Dinan.

(1.) * PLEDGE. *n. f.* [pleige, Fr. *pieggio*, Ital.] 1. Any thing put to pawn. 2. A gage; any thing given by warrant or security; a pawn.—The great humility, zeal and devotion, which appeared to

P p p p 2

be

be in them, was in all men's opinion a *pledge* of their harmless meaning. *Hooker.*

There is my *pledge*, I'll prove it on thy heart. *Shak.*

That voice their liveliest *pledge*

Of hope in fears and dangers. *Milton.*

—Money is necessary both for counters and for *pledges*. *Locke.*

Ariberth shall be the *pledge* of peace. *Rouss.*

—The deliverance of Israel out of Egypt by the ministry of Moses, was intended for a type and *pledge* of the spiritual deliverance which was to come by Christ. *Nelson.* 3. A surety; a bail; an hostage.—The Guinians offered to leave *pledges*, *fix* for one. *Raleigh.*

Good sureties will we have for thy return,
And at thy *pledge's* peril keep thy day. *Dryden.*

(2.) *PLEDGE*, in Scots Law. See LAW, Part III. Chap. II. Sect. XIII. § 13.

(3.) *PLEDGE*, (*pignus*.) in common law, is a surety or gage, either real or personal, which the plaintiff or demandant is to find for his prosecuting the suit.

(4.) *PLEDGE*, FRANK. See FRANK; N° II, § 7, 8.

(5.) *PLEDGE* OF GOODS for money. See PAWN.

(1.) * TO *PLEDGE*. *v. a.* [*plegius*, Fr. *piegiare*, Italian.] 1. To put in pawn.—

He *pledg'd* it to the knight; the knight had wit,
So kept the diamond; and the rogue was bit. *Pope.*

2. To give as warrant or security. 3. To secure by a *pledge*.—

Here to *pledge* my vow, I give my hand. *Shak.*

4. To invite to drink; by accepting the cup or health after another.—

The fellow, that parts bread with him and *pledges*

The breath of him in a divided draught,
Is the readiest man to kill him. *Shak.*

To you noble lord of Westmoreland;
pledge your grace. *Shak.*

—That hexanimous orator began the king of Homibia's health; he presently *pledg'd* it. *Hoswel.*

—Here's to thee, Dick; this whining love despoise;

Pledge me, my friend. *Cowley.*

(2.) To *PLEDGE*, *v. a.* in drinking denotes to warrant, or be surety to one, that he shall receive no harm while he is taking his draught. The phrase is referred by our antiquaries to the practice of the Danes, heretofore in England, who frequently used to stab or cut the throats of the natives while they were drinking.

PLEDGERY, or *PLEGGERY*, *n. f.* in law, suretyship, or an undertaking or answering for another.

(1.) * *PLEDGET*. *n. f.* [*plögke*, Dutch.] A small mass of lint.—I applied a *pledget* of Aflacon. *Wiseman.*

(2.) *PLEDGET*, BOLSTER, or COMPRESS, in surgery, is a kind of flat tent laid over a wound to imbuë the superfluous humours, and to keep it clean.

PLEDRAN, a town of France, in the dep. of the North Coasts, 4 miles S. of St Brieux, and 9 W. of Lamballe.

PLEGGERY. See *PLEDGERY*.

(1.) * *PLEIADS*. *PLEIADES*. *n. f.* [*pleiades*, Lat. *πλειάδες*.] A northern constellation.—

The *pleiades* before him danc'd. *Milton.*
Then sailors quarter'd heav'n, and found a name

For *pleiades*, hyades, and the northern ear. *Dryd.*

(2.) *PLEIADES*, in astronomy, an assemblage of seven stars in the neck of the constellation Taurus. They are thus called from the Greek *πλεῖν*, *navigare*, to sail; as being terrible to mariners, by reason of the rains and storms that frequently rise with them. The Latins called them *vergiliae*, from *ver*, *spring*; because of their rising about the time of the vernal equinox. The largest is of the third magnitude, and is called *lucida pleiadum*.

(3.) *PLEIADES*, in the mythology, the seven daughters of Atlas king of Mauritania and Pleione, thus called from their mother. They were Maia, Electra, Taygete, Asterope, Merope, Halcione, and Celæno; and were also called *Atlantides*, from their father. These princesses were carried off by Burius king of Egypt; but Hercules having conquered him, delivered them to their father: yet they afterwards suffered a new persecution from Orion, who pursued them five years, till Jove, being prevailed on by their prayers, took them up into the heavens, where they form the constellation which bears their name. MAIA was the mother of MERCURY by Jupiter.

PLEIBERCHRIST, a town of France, in the dep. of Finistère; 4½ miles SSW. of Morlaix, and 15 E. of Landerneau.

PLEIBURGH, a town of Germany, in Carinthia, on the Feiße, at the foot of a mountain.

PLEIGUIEN, a town of France, in the dep. of Ille and Vilaine, 5 miles E. of Dinan, and 12 S. of St Malo.

PLEINFELD, a town of Franconia, in Aichstadt, 16 miles N. of Aichstadt.

PLEINTING, a town of Lower Bavaria, on the Danube, 5 miles SSE. of Osterhof.

PLEIONE, in fabulous history, a daughter of Oceanus, who married Atlas K. of Mauritania, by whom she had a son and 14 daughters, 7 of whom were from her called *PLEIADES*, and 5 were called *HYADES*, from their brother Hyas. (*Ovid.*) See these articles.

PLEISNITZ, a town of Hungary, 25 miles W. of Caschan.

PLEISSA, or } a barony of Germany in Hesse
PLEISSEN, } Rheinfels, insulated in Brunswick.

PLEISVEDEL, a town of Bohemia, in Leitmeritz, 8 miles SW. of Leypa.

PLELAN, a town of France, in the dep. of the Ille and Vilaine, 30 miles ENE. of Vannes.

PLELO, a town of France, in the dep. of the North Coasts, 7½ miles WNW. of St Brieux, and 7½ E. of Guingamp.

PLEMET, a town of France, in the dep. of the North Coasts; 6 miles E. of Loudeac, and 12 S. of Lamballe.

PLEMMYRIUM, in ancient geography, a promontory of Syracuse with a castle: (*Purg. Æn.* iii. 693) now called *Massa Oliveri*.

PLEMONT,

PLEMONT, a cape of the island of Jersey, 8 miles N. W. of Helier.

PLEMY, a town of France, in the dep. of the North Coasts, 10 miles N. of Loudeac, and 20 S. of St Brieux.

* **PLENARILY**, *adv.* [from *plenary*.] Fully; completely.—The cause is made a plenary cause, and ought to be determined *plenarily*. *Ayliffe*.

* **PLENARINESS**, *n. f.* [from *plenary*.] Fullness; completeness.

(1.) * **PLENARY**, *adj.* [from *plenus*, Lat.] Full; complete.—I am far from denying that compliance on my part, for *plenary* consent it was not, to his destruction. *King Charles*.—The cause is made a *plenary* cause. *Ayliffe*.—A treatise on a subject should be *plenary* or full. *Watts*.

(2.) * **PLENARY**, *n. f.* Decisive procedure.—Infinitution without induction does not make a *plenary* against the king. *Ayliffe*.

(3.) **PLENARY INDULGENCES**. See **INDULGENCE**, § 2.

PLENEE, a town of France, in the dep. of the North Coasts; 6 miles NW. of Broons, and 2½ SE. of Lamballe.

PLENEUF, a town of France, in the dep. of the North Coasts; 7 miles N. of Lamballe, and 20 WNW. of Dinan.

* **PLENLUNARY**, *adj.* [from *plenilunium*, Latin.] Relating to the full moon.—If we add the two Egyptian days in every month, the interlunary and *plenilunary* exemptions, there would arise above 100 more. *Brown's Vulgar Errors*.

* **PLENPOTENCE**, *n. f.* [from *plenus* and *potentia*, Lat.] Fullness of power.

* **PLENPOTENT**, *adj.* [*plenipotens*, Lat.] Invested with full power.—

My substitutes I send you, and create *Plenipotent* on earth. *Milton's Par. Lost*.

(1.) * **PLENIPOTENTIARY**, *n. f.* [*plenipotenciaire*, Fr.] A negotiator invested with full power.—They were only the *plenipotentary* monks of the patriarchal monks. *Stillingfleet*.

(2.) **PLENIPOTENTIARY**. See **AMBASSADOR**.

* **PLENIST**, *n. f.* [from *plenus*, Latin.] One that holds all space to be full of matter.—Those spaces which the vacuists would have empty, because devoid of air, the *plenists* do not prove replenished with subtle matter by any sensible effects. *Boyle*.

(1.) * **PLENITUDE**, *n. s.* [*plenitudo*, from *plenus*, Lat. *plenitudo*, Fr.] 1. Fullness; the contrary to vacuity.—If there were every where an absolute *plenitude* and density without any pores between the particles of bodies, all bodies of equal dimensions would contain an equal quantity of matter, and consequently be equally ponderous. *Bentley*. 2. Repletion; animal fullness; plethora.—Relaxation from *plenitude* is cured by spare diet. *Arbutnot*. 3. Exuberance; abundance.—The *plenitude* of the pope's power of dispensing was the main question, *Bacon's Henry VII*. 4. Completeness.—

The *plenitude* of William's fame
Can no accumulated stores receive. *Prior*.

(2.) **PLENITUDE**, in medicine, chiefly denotes a redundancy of blood and humours.

* **PLENTEUS**, *adj.* [from *plenty*.] 1. Copiously; exuberant; plentiful.—

Now *plenteous* these acts of hateful strife. *Milt*.
Lab'ring the soil and reaping *plenteous* crop. *Milton*.

Two *plenteous* fountains the whole prospect crown'd. *Pope*.

2. Fruitful; fertile.—Take up the fifth part of the land in the seven *plenteous* years. *Genesis*, xii. 35.

* **PLENTEUSLY**, *adv.* [from *plenteous*.] Copiously; abundantly; exuberantly; plentifully.—

Thy due from me is tears,
Which nature, love, and filial tenderness
Shall, O dear father, pay thee *plenteously*. *Shak*.

Each that crept, which *plenteously*
The waters generated. *Milt, Par. Lost*.

—God proves us in this life, that he may the more *plenteously* reward us in the next. *Wake's Preparation for Death*.

* **PLENTEOUSNESS**, *n. s.* [from *plenteous*.] Abundance; fertility; plenty.—The seven years of *plenteousness* in Egypt were ended. *Genesis*.

* **PLENTIFUL**, *adj.* [*plenty* and *full*.] Copious; abundant; exuberant; fruitful.—This is rather used in prose than *plenteous*.—To Amalthea he gave a country, bending like a horn; whence the tale of Amalthea's *plentiful* horn. *Raleigh*.—

—He that is *plentiful* in expences, will hardly be preserved from decay. *Bacon's Essays*.—If it be a long winter it is commonly a more *plentiful* year. *Bacon's Nat. Hist*.—When they had a *plentiful* harvest, the farmer had hardly any corn. *L'Estrange*.—

Alcibiades was a young man of noble birth, excellent education, and a *plentiful* fortune. *Swift*.

* **PLENTIFULLY**, *adv.* [from *plentiful*.] Copiously; abundantly.—They were at that time *plentifully* increased. *Brown's Vulgar Errors*.—

Bern is *plentifully* furnished with water. *Addison on Italy*.

* **PLENTIFULNESS**, *n. s.* [from *plentiful*.] The state of being plentiful; abundance; fertility.

* **PLENTY**, *n. s.* [from *plenus*, full.] 1. Abundance; such a quantity as is more than enough.—

Peace,
Dear nurse of arts, *plenties*, and joyful birth. *Shak*.
—What makes land, as well as other things, dear, is *plenty* of buyers, and but few sellers; and so *plenty* of sellers, and few buyers, makes land cheap. *Locke*. 2. Fruitfulness; exuberance.—

The teeming clouds
Descend in glad some *plenty* o'er the world. *Thomson*.

3. It is used, I think barbarously, for *plentiful*.—

To graze with thy calves,
Where water is *plenty*. *Tupper's Husbandry*.—If reasons were as *plenty* as black berries, I would give no man a reason on compulsion. *Shak. Henry IV*. 4. A state in which enough is had and enjoyed.—Ye shall eat in *plenty* and be satisfied. *Joel* ii. 26.—

Whose grievance is satiety of ease,
Freedom their pain, and *plenty* their disease. *Harte*.

PLENUM, in physics, denotes, according to the Cartesians, that state of things wherein every part of space is supposed to be full of matter, in opposition to a **VACUUM**, which is a space supposed devoid of all matter.

PLENUS FLOS, a full flower; a term expressive of

of the highest degree of luxuriance in flowers. See BOTANY, § 96, 2; and LUXURIANS FLOS. Such flowers, although the most delightful to the eye, are both *vegetable monsters*; and, according to the sexualists, *vegetable eunuchs*; the unnatural increase of the petals constituting the first; the consequent exclusion of the stamina or male organs, the last. The following are well known examples of flowers with more petals than one; ranunculus, anemone, marsh-marygold, columbine, fennel-flower, poppy, pæony, pink, gilliflower, campion, viscous campion, lily, crown imperial, tulip, narcissus, rocket, mallow, Syrian mallow, apple, pear, peach, cherry, almond, myrtle, rose, and strawberry. Flowers with one petal are not so subject to fullness. The following, however, are instances: polyanthes, hyacinth, primrose, crocus, meadow saffron, and thorn-apple, though Kramer has asserted that a full flower with one petal is a contradiction in terms. In flowers with one petal, the mode of luxuriance, or impletion, is by a multiplication of the divisions of the limb or upper part; in flowers with more petals than one, by a multiplication of the petals or nectarium. To take a few examples. Columbine is rendered full in three different ways: 1. By the multiplication of its petals, and total exclusion of the nectaria; 2. By the multiplication of the nectaria, and exclusion of the petals; or, 3. By such an increase of the nectaria only as does not exclude the petals, between each of which are interjected three nectaria, placed one within another. Again, fennel-flower is rendered full by an increase of the nectaria only; narcissus, either by a multiplication of its cup and petals, or of its cup only; lark-spur commonly by an increase of the petals and exclusion of the spur, which is its nectarium. In *saponaria concava anglica*, the impletion is attended with the singular effect of incorporating the petals, and reducing their number from five to one; and in gelder-rose, the luxuriance is effected by an increase both in magnitude and number of the circumference or margin of the head of flowers, in the plain, wheel-shaped, barren florets; and an exclusion of all the bell-shaped hermaphrodite florets of the centre or disk. This last instance seems to connect the different modes of impletion in simple and compound flowers. As a simple luxuriant flower is frequently, by young botanists, mistaken for a compound flower in a natural state, such flowers may always be distinguished with certainty by this rule: That in simple flowers, however luxuriant, there is but one pistillum or female organ; whereas in compound flowers, each floret, or partial flower, is furnished with its own proper pistillum. Thus in hawk-weed, a compound flower, each flat or tongue-shaped floret in the aggregate has its five stamina and naked seed, which last is in effect its pistillum; whereas, in a luxuriant lychnis, which is a simple flower, there is found only one pistillum common to the whole. In a compound radiated flower, which generally consists of plain florets in the margin or radius, and tubular or hollow florets in the centre or disk, plenitude is effected either by an increase of the florets in the margin, and a total exclusion of those in the disk; which mode of luxuriance is termed

impletion by the radius; and resembles what happens in the gelder rose: or by an elongation of the hollow florets in the centre, and a less profound division of their brims; which is termed *impletion by the disc*. In the first mode of luxuriance, the florets in the centre, which are always hermaphrodite or male, are entirely excluded; and in their place succeed florets similar in sex to those of the radius. Now, as the florets in the margin of a radiated compound flower are always either female, furnished with the pistillum only; or neuter, furnished with neither stamina nor pistillum; it is evident, that a radiated compound flower, filled by the radius, will either be entirely female, as in feverfew, daisy, and African marigold; or entirely neuter, as in sun-flower, marygold, and centaury: hence it will always be easy to distinguish such a luxuriant flower from a compound flower with plain florets in a natural state; as these flowers are all hermaphrodite, that is, furnished with both stamina and pistillum. Thus the full flowers of African marygold have each floret furnished with the pistillum or female organ only: the natural flowers of dandelion, which, like the former, is composed of plain florets, are furnished with both stamina and pistillum. In the 2d mode of luxuriance, termed *impletion by the disc*, the florets in the margin sometimes remain unchanged; but most commonly adopt the figure of those in the centre, without, however, suffering any alteration in point of sex; so that confusion is left to be apprehended from this mode of luxuriance than from the former; besides, the length to which the florets in the centre run out, is of itself a sufficient distinction, and adapted to excite at once an idea of luxuriance. Daisy, feverfew, and African marygold, exhibit instances of this as well as of the former mode of impletion. In luxuriant compound flowers with plain florets, the *semifuscules* of Tournefort, the stigma or summit of the style in each floret is lengthened, and the seed-buds are enlarged and diverge; by which characters such flowers may always be distinguished from flowers of the same kind in a natural state. Scorzonera, nipple-wort, and goat's beard, furnish frequent instances of this plenitude. Lastly, the impletion of compound flowers with tubular or hollow florets, the *fusculus* of Tournefort, seems to observe the same rules as that of radiated flowers just delivered. In everlasting flower, the *xeranthemum* of Linnæus, the impletion is singular, being effected by the enlargement and expansion of the inward chaffy scales of the calyx. These scales, which become coloured, are greatly augmented in length, so as to overtop the florets, which are scarce larger than those of the same flower in a natural state. The florets too in the margin, which in the natural flower are female, become by luxuriance barren; that is, are deprived of the pistillum; the style, which was very short, spreads, and is of the length of the chaffy scales; and its summits, formerly two in number, are changed into one. Full flowers are more easily referred to their respective genera in methods founded upon the calyx, as the flower-cup generally remains unaffected by this highest degree of luxuriance.

(1) * PLEONASM. n. f. [*pleonasma*, Fr. *pleonasmus*,

exornus, Lat.) A figure of rhetoric, by which more words are used than are necessary.

(2.) **PLEONASM.** See **ORATORY**, § 403.

(1.) **PLES**, a town of Russia, in Koftrom, on the Volga, 16 miles S. of Koftrom. Lon. 59. 0. E. Ferro. Lat. 57. 15. N.

(2. 3.) **PLES**, or **PSZCZYNA**, a town of Silesia, in Ratibor, capital of a lordship so named. It has two churches, with walls and towers; 28 miles ESE. of Ratibor.

PLESCOF. See **PSKOF**, N^o 1. and 2.

(1.) **PLESCOW**, a duchy in Russia, between the duchies of Novogorod, Lithuania, Livonia, and Ingria.

(2.) **PLESCOW**, the capital of the above duchy, with an archbishop's see, and a strong castle. It is a large place, and divided into four parts, each of which is surrounded with walls. It is seated on the Muldaw, where it falls into the lake Plefcow, 80 miles S. of Narva, and 150 S. by W. of Peterburg. Lon. 27. 52. E. Lat. 57. 58. N.

* **PLESH.** *n. s.* [A word used by *Spenser* instead of *plash*, for the convenience of rhyme.] A puddle; a boggy marsh.—

Out of the wound the red blood flowed fresh,
That underneath his feet soon made a purple

pleth. *Spenser.*

PLESAY, a village of Essex, seven miles N. by W. of Chelmsford. It was the seat of the Lord High Constable of England from the earliest times till 1400. Thomas, Duke of Gloucester, uncle of K. Richard II. resided in it till 1397, when he was insidiously enticed from it by his nephew, way-laid on Epping Forest, hurried to a ship in the Thames, in which he was sent off to Calais, where he was privately murdered. See **ENGLAND**, § 30.

PLESSE, a town of Silesia, on the Vistula; 36 miles E. of Troppaw. Lon. 18. 36. E. Lon. 30. N.

PLESSEVITZA, a mountain of Croatia, 12 miles NW. of Bihacs.

(1.) **PLESSIS LES TOURS**, a ci-devant royal palace of France, in the dep. of Indre and Loire, within half a league of Tours. It was built by Lewis XI. who died in it, in 1483. It is situated in a plain surrounded by woods, near the Loire. The building is yet handsome, though built of brick, and converted to purposes of commerce.

(2.) **PLESSIS PIQUEL**, a town of France, in the department of Paris, three miles SSW. of Paris.

PLESTIN, a town of France, in the department of the North Coasts; 7½ miles SW. of Launion, and 19 WSW. of Guincamp.

PLETCHBERG, a mountain of Switzerland, in Berne; 22 miles SSE. of Thun.

(1.) * **PLETHORA.** *n. s.* [from *πλεθω*.] The state in which the vessels are fuller of humours than is agreeable to a natural state of health; arises either from a diminution of some natural evacuations, or from debauch and feeding higher or more in quantity than the ordinary powers of the viscera can digest; evacuations and exercise are its remedies.—The diseases of the fluids are a *plethora*, or too great abundance of laudable juices. *Arbuthnot.*

(2.) **PLETHORA**, in medicine [from *πλεθος*, plenitude], may be either sanguine or serous. In the first there is too much crassamentum in the blood, in the latter too little. In the sanguine plethora, there is danger of a fever, inflammation, apoplexy,

rupture of the blood vessels, obstructed secretions &c.; in the serous, of a dropy, &c. A rarefaction of the blood produces all the effects of a plethora; it may accompany a plethora, and should be distinguished therefrom. Mr Bromfield observes, that a sanguine plethora may thus be known to be present by the pulse. An artery overcharged with blood is as incapable of producing a strong full pulse, as one that contains a deficient quantity; in both cases there will be a low and weak pulse. To distinguish rightly, the pulse must not be felt with one or two fingers on the carpal artery; but if three or four fingers cover a considerable length of the artery, and we press hard for some time on it, and then suddenly raise all these fingers except that which is nearest to the patient's hand, the influx of the blood, if there is a plethora, will be so rapid as to raise the other finger, and make us sensible of the fulness. The sanguine plethora is relieved by bleeding; the serous by purging, diuretics, and sweating. See **MEDICINE**, *Index*.

* **PLETHORETICK.** *adj.* [from *plethora*.]

* **PLETHORICK.** *adj.* Having a full habit.

—The fluids, as they consist of spirit, water, salts, oil, and terrestrial parts, differ according to the redundancy of the whole or of any of these; and therefore the *plethorick* are phlegmatick, oily, saline, earthy, or dry. *Arbuthnot.*

* **PLETHORY.** *n. s.* [from *πλεθος*, Fr. from *πλεθος*.] Fulness of habit.—In too great repletion, the elastic force of the tube throws the fluid with too great a force, and subjects the animal to the diseases depending upon a *plethora*: *Arbuthnot.*

PLETTENBERG, a town of Germany, in Westphalia, and county of Mark, on the Elbe and the Oester. The people are governed by their own magistrates; and manufacture cloths, scythes, and other iron works. The church is common to Lutherans and Calvinists. It lies 27 miles E. of Lennen, and 28 S. of Hannau.

PLEVEN, a town of European Turkey, in Bulgaria, on the Vid, 28 miles S. of Nicopolis.

* **PLEVIN.** *n. s.* [from *plevin*, Fr. *plevin*, law Latin.] In law, a warrant or assurance. See **REFLEVIN**, *Di.*

PLEUMANCAT, a town of France, in the department of the North Coasts; 6 miles SSW. of Dinan, and 16½ ESE. of Lamballe.

PLEUMARTIN, a town of France, in the department of the Vienne; 10 miles SE. of Chateilaurel, and 20 N. of Montmorillon.

PLEUMAUDAN, a town of France, in the department of the North Coasts, 6 miles SSW. of Dinan, and 16½ ESE. of Lamballe.

PLEUMOSII, an ancient people of Belgium, who inhabited the country now called Tournay. *Ces. de Bell. Gall. v. c. 38.*

PLEURA, in anatomy, a thin membrane covering the inside of the thorax. See **ANATOMY**, *Index*.

(1.) * **PLEURISY.** *n. s.* [from *πleuris*, Fr. *pleuritis*, Lat.] *Pleurisy* is an inflammation of the pleura, though it is hardly distinguishable from an inflammation of any other part of the breast; which are all from the same cause, a stagnated blood; and are to be remedied by evacuation, suppurative or expectorative, or all together. *Quincy.*

(2.) **PLEURISY**

(2.) **PLEURISY.** See **MEDICINE, Index.**

* **PLEURITICAL.** } *adj.* [from *pleurisy*. 1.

* **PLEURITICK.** } Diseased with a pleurisy.

—The viscous matter, which lies like leather upon the extravasated blood of *pleuritical* people, may be dissolved by a due degree of heat. *Arbutnot on Aliments*. 2. Denoting a pleurisy.—His blood was *pleuritical*, it had neither colour nor consistence. *Wiseman*.

PLEURITIS. See **MEDICINE, Index.**

PLEURON, an ancient city of *Ætolia*, on the *Evenus*; founded by *Pleuron*, the son of *Ætolus*, and father of *Agenor*. *Apollod.* i. c. 7. *Plin.* iv. c. 2.

PLEURONECTES, in ichthyology, a genus belonging to the order of thoracici. Both eyes are on the same side of the head; there are from four to five rays in the gill membrane; the body is compressed, the one side resembling the back, the other the belly. These flat fish swim sidewise, for which reason *Linnaeus* called them *Pleuronectes*. There are 17 species; the most remarkable are these:

1. **PLEURONECTES FLEBUS**, the **FLOUNDER**, inhabits every part of the British sea, and even frequents our rivers at a great distance from the salt waters; and for this reason some writers call it the *passer fluvialis*. It never grows large in our rivers, but is reckoned sweeter than those that live in the sea. It is inferior in size to the plaise, seldom or never weighing more than six pounds. It may very easily be distinguished from the plaise, or any other fish of this genus, by a row of sharp small spines that surround its upper sides, and are placed just at the junction of the fins with the body. Another row marks the side-line, and runs half way down the back. The colour of the upper part of the body is a pale brown, sometimes marked with a few obscure spots of dirty yellow; the belly is white.

2. **PLEURONECTES HIPPOGLOSSUS**, the **HOLIBUT**. This is the largest of the genus; some have been taken in our seas weighing from 100 to 300 pounds; but much larger are found in those of Newfoundland, Greenland, and Iceland, where they are taken with a hook and line in very deep water. They are part of the food of the Greenlanders, who cut them into large slips, and dry them in the sun. They are common in the London markets, where they are exposed to sale, cut into large pieces. They are very coarse eating, excepting the part which adheres to the side fins, which is extremely fat and delicious, but surfeiting. They are the most voracious of all flat fish. There have been instances of their swallowing the lead weight at the end of a line; with which the seamen were sounding the bottom from on board a ship. The holibut, in respect to its length, is the narrowest of any of this genus except the sole. It is perfectly smooth, and free from spines either above or below. The colour of the upper part is dusky; beneath, of a pure white. We do not count the rays of the fins in this genus; not only because they are so numerous, but because nature hath given to each species characters, independent of these rays, sufficient to distinguish them by.

3. **PLEURONECTES LIMANDA**, the **DAB**, is found with the other species, but is less common. It is in best season during February, March, and April;

they spawn in May and June, and become flabby and watery the rest of summer. They are superior in quality to the plaise and flounder, but far inferior in size. It is generally of an uniform brown colour on the upper side, though sometimes clouded with a darker. The scales are small and rough, which is a character of this species. The lateral line is extremely incurvated at the beginning, then goes quite straight to the tail. The lower part of the body is white.

4. **PLEURONECTES MAXIMUS**, the **TURBOT**, grows to a very large size: Mr Pennant has seen them of 23 pounds weight; but has heard of some that weighed 30. The turbot is of a remarkable square form; the colour of the upper part of the body is cinereous, marked with numbers of black spots of different sizes; the belly is white, the skin is without scales, but greatly wrinkled, and mixed with small short spines, dispersed without any order. See **FISHERY**, § 19.

5. **PLEURONECTES PLATessa**, the **PLAISE**, are very common on most of our coasts, and sometimes taken of the weight of 15 pounds; but they seldom reach that size, one of eight or nine pounds being reckoned a large fish. The best and largest are taken off Rye on the coast of Sussex, and also off the Dutch coasts. They spawn in the beginning of February. They are very flat, and much more square than the holibut. Behind the left eye is a row of six tubercles, that reaches to the commencement of the lateral line. The upper part of the body and fins are of a clear brown, marked with large bright orange-coloured spots; the belly is white.

6. **PLEURONECTES SOLA**, the **SOLE**, is found on all our coasts; but those on the western shores are much superior in size to those on the north. On the former they are sometimes taken of the weight of six or seven pounds, but towards Scarborough they rarely exceed one pound; if they reach two, it is extremely uncommon. They are usually taken in the trawl-net; they keep much at the bottom, and feed on small shell-fish. It is of a form much more narrow and oblong than any other of the genus. The irides are yellow, the pupils of a bright saphirine colour; the scales are small, and very rough, the upper part of the body is of a deep brown, the tip of one of the pectoral fins black, the under part of the body white, the lateral line is straight, the tail rounded at the end. It is a fish of a very delicate flavour, but the small soles are in this respect much superior to large ones. By the ancient laws of the Cinque Ports, no one was to take soles from the 1st of November to the 15th of March; neither was any body to fish from sun-setting to sun-rising, that the fish might enjoy their night food. The chief fishery for them is at Brixham in Torbay.

(1.) **PLEURS**, a town of France, in the department of the Marne, six miles SE. of Sezanne.

(2.) **PLEURS**, a town of Switzerland, now in Italy, which was buried under a mountain on the 25th August 1618. See **MOUNTAIN**, § 14. Of this fatal event, Bishop Burnet, in his *Travels*, p. 96, gives a particular account. Pleurs lay about four miles NE. of Chiavenna. The town was half the bigness of Chiavenna, but much more nobly built, having many palaces, besides the great

great palace of Francken. Its population was estimated at 22,000, none of whom escaped but one man.

PLEUVAULT, a town of France, in the dep. of Cote D'Or: 12 miles SE. of Dijon.

PLEXIPPUS and **TOXUS**, the sons of Thestius: brothers of Althæa, and uncles of Meleager, who killed them, and in consequence lost his own life. See **MELEAGER**, N° 1.

PLEXUS. *n. f.* among anatomists, a bundle of small vessels interwoven in the form of net-work: has a congeries of vessels within the brain is called *plexus choroides, reticularis, or retiformis*. See **ANATOMY, Index**. A plexus of nerves is an union of two or more nerves, forming a sort of ganglion or knot.

PLEYBEN, a town of France, in the dep. of the Finistère, 5 miles N. of Chateaulin, and 15 W. of Carhaix.

PLEYBERG, a town of Carinthia, in Bamberg; 10 miles E. of Clagenfurt, and 6 SW. of Laverdun.

* **PLIABLE**. *adj.* [*pliable*, from *plier*, French, to bend.] 1. Easy to be bent; flexible.—Though in act be never so sinful, they will strip it of its guilt, and make the very law so *pliable* and bending, that it shall be impossible to be broke. *South*.—Whether the different motions of the animal spirits may have any effect on the mould of the face, when the lineaments are *pliable* and tender, I shall leave to the curious. *Addison*. 2. Flexible of disposition; easy to be persuaded.

* **PLIABLENESS**. *n. f.* [from *pliable*.] 1. Flexibility; easiness to be bent. 2. Flexibility of mind.—God's preventing graces, which have thus fitted the soil for the kindly seed-time, planted *pliability* and humility in the heart. *Hamm*.—Compare the ingenuous *pliability* to virtuous counsels in youth, as it comes fresh out of the hands of nature, with the most confirmed obstinacy in most sorts of sin, that is to be found in an aged sinner. *South*.

* **PLIANCY**. *n. f.* [from *pliant*.] Easiness to be bent.—Had not exercise been necessary, nature would not have given such an activity to the limbs, and such a *pliancy* to every part. *Spektor*.

* **PLIANT**. *adj.* [*pliant*, French.] 1. Bending; tough; flexible; flexible; lithe; limber.—An anatomist promised to dissect a woman's tongue, and examine whether the fibres may not be made up of a finer and more *pliant* thread. *Addison*. 2. Easy to take a form.—

Earth but new divided from the sky,
And *pliant*, still retain'd th' æthereal energy.

As the wax melts that to the flame I hold,
Pliant and warm may still her heart remain,
Soft to the print, but ne'er turn hard again.

Granville.

3. Easily complying.—In languages the tongue is more *pliant* to all sounds in youth than afterwards. *Bacon*.—

Those, who bore bulwarks on their backs,
Now practise ev'ry *pliant* gesture,
Op'ning their trunk for ev'ry tester. *Swift*.

4. Easily persuaded.—The will was then ductile and *pliant* to right reason, met the dictates of a clarified understanding half-way. *South*.

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* **PLIANTNESS**. *n. f.* [from *pliant*.] Flexibility; toughness.—Greatness of weight, closeness of parts, fixation, *pliancy*, or softness. *Bacon*.

PLICA POLONICA, or *plaited hair*, is a disease frequent in Poland, and occurring also in Hungary, Russia, and Tartary. Many hypotheses have been advanced respecting the causes of this disease. The most probable are those assigned by Dr Vicat, viz. 1. The Polish air, which is rendered insalubrious by numerous woods and morasses, and occasionally derives an uncommon keenness even in the midst of summer from the position of the Carpathian mountains; for the S. and SE. winds, which usually convey warmth in other regions, are in this chilled in their passage over their snowy summits. 2. Unwholesome water; for although Poland is not deficient in good springs, yet the common people usually drink that which is nearest at hand, taken indiscriminately from rivers, lakes, and stagnant pools. 3. The gross inattention of the natives to cleanliness; for those who are not negligent in their persons and habitations, are less liable to be afflicted with the *plica* than others who are deficient in that particular. In a word, the *plica polonica* appears to be a contagious distemper; which, like the leprosy, prevails among people ignorant in medicine, and inattentive to check its progress, but is rarely known in those countries where proper precautions are taken to prevent its spreading.

* **PLICATION**. } *n. f.* [*plicatura*, from *plico*,
* **PLICATURE**. } Lat.] Fold; double. *Plication* is used somewhere in *Clarissa*.

* **PLIERS**. *n. f.* [from *ply*.] An instrument by which any thing is laid hold on to bend it.—*Pliers* are of two sorts, flat-nosed and round-nosed; their office is to hold and fasten upon a small work, and to fit it in its place: the round-nosed *pliers* are used for turning or boring wire or small plate into a circular form. *Moxon*.—I made a detention by a small pair of *pliers*. *Wifeman*.

* **PLIGHT**. *n. f.* [This word *Skinner* imagines to be derived from the Dutch, *plucht*, office or employment; but *Junius* observes, that *plucht*, Saxon, signifies distress or pressing danger; whence I suppose, *plight* was derived, it being generally used in a bad sense.] 1. Condition; state.—

He no longer would

There dwell in peril of like painful *plight*.

—I think myself in better *plight* for a leader than you are. *Shak.*

My women may be with me; for, you see
My *plight* requires it. *Shak.*

They in lowliest *plight* repentant stood. *Milt.*

Thou must not here

Lie in this miserable loathsome *plight*. *Milton.*

Most perfect hero tried in heaviest *plight*

Of labours huge and hard. *Milton.*

2. Good case.—

He that with labour can use them aright,
Hath gain'd to his comfort, and cattle in *plight*.

3. Pledge; gage. [from the verb.]—

That lord, whose hand must take my *plight*,
shall carry
Half my love with him, half my care and duty.

Shak.

4. [From

4. [From *To plight*.] A fold; a pucker; a double; a purse; a plait.—

Purled upon with many a folded *plight*. *Spenser*.

5. A garment of some kind. Obsolete.—

He let not lack

My *plight*, or coat, or cloak. *Chapman*.

* To *PLIGHT*. *v. a.* [*plichten*, Dutch.] 1. To pledge; to give as surety.—

He *plighted* his right hand

Unto another love.

Saint Withold

Met the night mare, and her ninefold,

Bid her alight, and her troth *plight*. *Shakspeare*

I again, in Henry's royal name,

Give thee her hand for sign of *plighted* faith. *Shakspeare*

Here my inviolable faith I *plight*. *Dryden*

New vows to *plight*, and *plighted* vows to break. *Dryden*

I'll never mix my *plighted* hands with thine. *Addison*

2. To braid; to weave. [from *plies*; Lat. whence to ply or bend, and *plight*, *plight*, or *plait*, a fold or flexure.]—

About her neck, or rings of rusties *plight*.

Spenser.

Some gay creatures of the element,

That in the colours of the rainbow live,

And play i' th' *plighted* clouds. *Milton*

PLIMLIMMON, a high mountain of S. Wales, in the N. part of Cardiganhire, on the borders of Montgomeryshire; called also *Snocodon*. See *SNOWDON*.

PLIMPTON, or PLYMPTON, a town of Devonshire, with a market on Saturdays; seated on a branch of the Plym. It had once a castle, now in ruins. It sends two members to parliament; is 7 miles E. of Plymouth, and 118 W. by S. of London. Lon. 4. c. W. Lat. 50. 22. N.

PLINIA, in botany; a genus of plants of the polyandria class, in the order monogynia. The empalement is divided into 5 segments; the flower consists of 5 petals; the stamina are numerous filaments, slender, and as long as the flower; the anthers, and the germs of the pistil are small; the style is subulated, and of the length of the stamina; the stigma is simple; the fruit is a large globose berry, of a striated or fuculated surface, containing only one cell, in which is a very large, smooth, and globose seed. There is only one species.

PLINIUS SECUNDUS, Caius Cæcilius, the complete Roman name of both the Plinies. See *PLINY*, N° 1. and 2.

(1.) * *PLINTH*. *n. f.* [*πλινθ*]. In architecture, is that square member which serves as a foundation to the base of a pillar; Vitruvius calls the upper part or abacus of the Tuscan pillar, a *plinth*, because it resembles a square tile; moreover, the same denomination is sometimes given to a thick wall, wherein there are two or three bricks advanced in form of a platband. *Harris*.

(2) *PLINTH*, ORLE, or ORLO. See *ARCHITECTURE*, *Index*. Vitruvius also calls the Tuscan abacus *plinth*.

(3.) *PLINTH* OF A STATUE, &c. is a base, either flat, round, or square, that serves to support it.

(4.) *PLINTH* OF A WALL, denotes two or three rows of bricks advancing out from a wall; or, in

general; a flat high moulding, that serves in a front wall to mark the floors, to sustain the caves of a wall, or the larnier of a chimney.

PLINTHINE, an ancient town of Egypt, on the coast of the Mediterranean.

(1.) *PLINY*, THE ELDER, or CAIUS CÆCILIUS PLINIUS SECUNDUS, one of the most learned men of ancient Rome, was descended from an illustrious family, and born at Verona. He bore arms in a distinguished post; was one of the college of Augurs; became intendant of Spain; and was employed in several important affairs by Vespasian and Titus, who honoured him with their esteem. The eruption of Mount Vesuvius, which happened in the year 79, proved fatal to him. His nephew, Pliny the Younger, relates the circumstances of that dreadful eruption, and the death of his uncle, in a letter to Tacitus. Pliny the Elder wrote a Natural History in 37 books, which is still extant, and has had many editions; the most esteemed of which is that of Father Hardesin, printed at Paris in 1723, in two volumes folio. He also wrote 160 volumes of observations on various authors; for which Lartius Lutinian offered him an enormous sum, equal to L.3222 Sterling, but was refused.

(2.) *PLINY*, THE YOUNGER, nephew and adopted son of the preceding, was born in the 9th year of Nero, and the 61d of Christ, at Novocomum, now Como, upon the lake Larius, near which he had several beautiful villas. Lucius Cæcilius was the name of his father. He showed very early talents. He wrote a Greek tragedy at 14 years of age. He lost his father when he was young; and had the famous Virginius for his tutor, whom he has set in a glorious light. He frequented the schools of the rhetoricians, and heard Quintilian; for whom he ever after entertained to high an esteem, that he bestowed a considerable portion upon his daughter at her marriage. He was in his 18th year when his uncle died; and he then began to plead in the forum, which was the usual road to dignities. About a year after, he assumed the military character, and went into Syria as tribune; but this did not suit his taste, and he returned after a campaign or two. In his passage home he was detained by contrary winds at the island of Icaria, where he wrote poetry. Upon his return from Syria, he married, and settled at Rome, in the reign of Domitian. During this most perilous time, he continued to plead in the forum, where he was distinguished no less by his uncommon abilities and eloquence, than by his great resolution and courage, which enabled him to speak boldly, when scarcely any one else durst speak at all. He was therefore often appointed by the senate to defend the plundered provinces against their oppressive governors, and to manage other causes of a like important and dangerous nature. One of these was for the province of Boetia, in their prosecution of Bæbius Massia; in which he acquired so general an applause, that the emperor Nerva, then a private man, and in banishment at Tarentum, wrote to him a letter, in which he congratulated not only Pliny, but the age which had produced an example so much in the spirit of the ancients. Pliny relates this affair in a letter to Tacitus, whom he intreats to record it in his history.

history, but with much more modesty than Tully had intreated Luceius upon a similar occasion. He obtained the offices of quaestor and tribune, and fortunately escaped the tyranny of Domitian. But he tells us himself, that his name was afterwards found in Domitian's tablets, in the list of those who were destined to destruction. He lost his wife in the beginning of Nerva's reign, and soon after married his beloved Calphurnia, of whom we read so much in his Epistles. He had, however, no children by either of his wives; and hence we find him thanking Trajan for the *ius trium liberorum*, which he had granted to his friend Suetonius Tranquillus. He was promoted to the consulate by Trajan in the year 100, when he was 38 years of age; and in this office pronounced that famous panegyric, which has ever since been admired, as well for the copiousness of the topics as the elegance of address. Then he was elected augur, and afterwards made proconsul of Bithynia; whence he wrote to Trajan that curious letter concerning the primitive Christians; which, with Trajan's rescript, is happily extant among his Epistles. (See CHRISTIAN, § 10.) Pliny's letter, as Mr Melmoth observes in a note upon the passage, is esteemed one of the few genuine monuments of ecclesiastical antiquity relating to the times immediately succeeding the apostles, it being written at most not above 40 years after the death of St Paul. It was preserved by the Christians, as a clear and unsuspicious evidence of the purity of their doctrines, and is often appealed to by the early writers of the church against the calumnies of their adversaries. It is not known what became of Pliny after his return from Bithynia. Antiquity is also silent as to the time of his death: but it is supposed that he died either a little before or soon after Trajan; that is, about A. D. 116. Pliny was one of the greatest wits, and one of the worthiest men, among the ancients. He had fine parts, which he cultivated to the utmost; and he accomplished himself with all the knowledge of the age. He wrote and published a great number of books; but nothing has escaped the wreck of time except his Letters, and his panegyric upon Trajan. This has ever been considered as a master-piece; and if he has almost exhausted all the ideas of perfection upon that prince, yet no panegyrist ever possessed a subject, on which he might better indulge in all the flow of eloquence, without incurring the suspicion of flattery and falsehood. In his letters he may be considered as writing his own memoirs. Every epistle is a kind of historical sketch, wherein we have a view of him in some striking attitude. In them are also preserved anecdotes of many eminent persons, whose works are come down to us, as Suetonius, Silius Italicus, Martial, Tacitus, and Quintilian; and of curious things, which throw great light upon the history of those times. In a word his writings breathe a spirit of transcendent goodness and humanity. There are two elegant English translations of his Epistles; the one by Mr Melmoth, and the other by Lord Orrery.

PLISA, a town of Lithuania, in the palatinate of Minsk; 22 miles E. of Minsk.

PLISTARCHUS, the son of Leonidas, K. of Sparta, succeeded Cleombrotus. *Herod. ix. 10.*

PLISTHANUS, a philosopher of Elis, who succeeded PHÆDON in his Eliac School. *Diog.*

PLISTHENES, the son of ATREUS, king of Argos, and the father of AGAMEMNON and MENELAUS, according to Hesiod and others. He died before his father, and his children were educated by their grandfather, Atreus, and hence were called ATRIDÆ, and passed for his sons.

PLISTONAX, the son of Pausanias, one of the kings of Sparta, was general of the Lacedæmonians in the Peloponnesian war. He succeeded Plistarchus, and reigned 38 years, but was banished 19 years, till he was recalled by order of the Delphian oracle. *Thucyd.*

PLISTUS, a river of Phocis, which runs into the bay of Corinth. *Strabo, ix.*

PLIVA, a river of Bosnia, which runs into the Verbas.

PLIUSA, a river of Russia, which runs into the Baltic, between Narva and Ivangorod.

PLIVSKINA, a town of Russia, in Irkutsk, 20 miles NE. of Old Edinsk.

PLIWSCHEIN, a town of Prussia, in the prov. of Samland, 18 miles E. of Königsberg.

PLOCAMA, in botany, a genus of the monogynia order, belonging to the pentandria class of plants. The calyx is quinqueidentate; the fruit is a berry and trilocular, with solitary seeds. There is only one species;

PLOCAMA PENDULA, a native of the Canaries.

PLOCE. See ORATORY, § 208.

PLOCKEN ALBEN, a mountain of Germany, in Carinthia; 6 miles SE. of Mautern.

(1.) PLOCKSKO, or PLOCKZKO, a palatinate of Poland, bounded on the N. by Regal Prussia, E. by Mazovia, S. by the Vistula, and W. by the palatinate of Inowladislaw.

(2.) PLOCKSKO, or } the capital of the above

(2.) PLOCKZKO, } palatinate, with a castle and a bishop's see. The churches are very magnificent; and it is built upon a hill, whence there is a fine prospect every way, near the Vistula. It is 25 miles SE. of Uladislaw, and 65 W. of Warsaw. Lon. 19. 29. E. Lat. 51. 46. N.

* To PLOD. v. n. [*pflogben*, Dutch. *Skinner.*]

1. To toil; to toil; to drudge; to travel—A plodding diligence brings us sooner to our journey's end, than a fluttering way of advancing by starts. *L'Estrange.*—He knows better than any man, what is not to be written; and never hazards himself so far as to fall, but plods on deliberately, and, as a grave man ought, puts his staff before him. *Dryden.*

Th' unletter'd Christian, who believes in grofs,

Plods on to heav'n, and ne'er is at a loss. *Dryd.*
Some stupid, plodding, money-loving wight.

Young.

2. To travel laboriously.—

Rogues! plod away o' the hoof, seek shelter! *Shak.*

One of mean affairs

May plod it in a week. *Shak.*

Hast thou not held my stirrup?

Bare-headed, plodded by my foot-cloth mule?

Shak.

Ambitious love hath so in me offended,

Q q q q a

That

That barefoot *plod* I the cold ground upon,
With fainting vow. *Shak.*

3. To study closely and dully. —

Universal *plodding* prisons up.

The nimble spirits in the arteries. *Shak.*

He *plods* to turn his am'rous suit

T' a plea in law, and prosecute. *Hudibras.*

She reason'd without *plodding* long. *Swift.*

* **PLODDER.** *n. f.* [from *plod*.] A dull heavy
fabulous man. —

What have continual *plodders* ever won,

Save base authority from others books? *Shak.*

PLOEN, a town of Germany, in the circle of
Lower Saxony, and capital of Holstein. It stands
on the banks of a lake of the same name, and gave
a title to the duke of Holstein, till by the death of
the last duke Charles without male issue it fell to
the king of Denmark in 1761. It has been often
burnt. The old ducal palace is in the midst of
the town; which lies 22 miles NW. of Lubeck,
and 10 SE. of Keill. Lon. 10. 30. E. Lat. 54. 11.
N.

(1.) **PLOERMEL**, a town of France in the dep.
of the Morbihan, and ci-devant province of Bre-
tagne; 4 miles W. of Auray, 12 SE. of Orient,
and 27 NE. of Vannes.

(2.) **PLOERMEL**, another town of France, also
in the Morbihan, described by Mr Cruttwell, as
"9 *posts* E. of Hennebont, (though he nowhere
defines a *post*), and 54½ W. of Paris. Lon. 15. 16.
E. Ferro. Lat. 47. 57. N."

PLOESTI, a town of Walachia, 128 miles E.
of Orsova, and 200 E. of Belgrade.

PLOEUC, a town of France, in the dep. of the
North Coasts; 10 miles S. of St Brieux, and 10
N. of Loudeac.

PLOGASTEL, a town of France, in the dep.
of Finistère; 7 miles W. of Quimper, and 9 ESE.
of Pont croix.

PLOGONNEC, a town of France, in the dep.
of Finistère; 5 miles E. of Douarnenez, and 6
NNW. of Quimper.

PLOMBIERES, two towns of France; 1. in
the dep. of the Cote D'Or, 3 miles NW. of Di-
jon: 2. in that of the Vosges; 6 miles SW. of
Remiremont, and 12 S. of Epinal.

PLOMELIN, a town of France, in the dep. of
Finistère, 4 miles S. of Quimper, and 10 NW. of
Concarneau.

PLOMEUR, a town of France in the dep. of
Finistère, 10½ miles SSW. of Quimper, and 14
S. of Douarnenez.

PLOMION, a town of France in the dep. of
the Aisne; 6 miles ESE. of Vervins.

PLOMO, in metallurgy, is a name given by
the Spaniards, who have the care of the silver
mines, to the slyer ore when found adhering to
the surface of stones, and when it incrusts their
cracks and cavities like small grains of gun-
powder. Though these grains be few in number, and
the rest of the stone has no silver in it, yet they
are always very happy when they find it, as it is
a certain token that there is a rich vein near it.
And if in digging forwards they still meet with
these grains, or the plomo in greater quantity, it
is a certain sign that they are getting more and
more near the good vein.

PLOMODIERN, a town of France, in the dep.
of Finistère; 4 miles W. of Chateaulin, and 12
N. of Quimper.

PLONCOUR, a town of France, in the dep.
of Finistère; 8 miles SW. of Quimper, and 11
SE. of Pontcroix.

PLONDIRY, a town of France, in the dep. of
the Finistère; 4½ miles E. of Landernau, and 4½
SW. of Landivisiau.

PLONGONVERT, a town of France, in the
dep. of the North Coasts; 5 miles S. of Belleisle
en Terre, and 10 WSW. of Guingamp.

PLONSK, a town of Poland, in Ploczko; 22
miles N. of Ploczko.

PLOSAWO, a town of Poland, in Belez.

(1.) **PLOT**, Robert, LL.D. a learned antiqua-
rian and philosopher, born at Sutton-barn, in the
parish of Borden in Kent, in 1641. He studied in
Magdalen-hall, afterwards in University-college,
Oxford. In 1682 he was elected secretary of the
Royal Society, and published the *Philos. Transf.*
from N^o 143 to N^o 166 inclusive. The next year
Elias Ashmole, Esq. appointed him first keeper
of his museum, and about the same time the vice-
chancellor nominated him first professor of chemis-
try in the university of Oxford. In 1687 he
was made secretary to the Earl Marshal, and in
1688, *Historiographer* to King James II. In 1690
he resigned his professorship of chemistry, and
also his place of keeper of the museum, to which
he presented a very large collection of natural
curiosities; which were those he had described in
the histories of Oxfordshire and Staffordshire; the
former published at Oxford in 1677, folio; re-
printed with additions and corrections in 1705;
the latter in the same size in 1686. In January
1694-5, Henry Howard, Earl Marshal, nominated
him Mowbray-herald extraordinary; two days af-
ter which he was constituted register of the court
of honour; and, on the 30th of April 1696, he
died of the stone at his house in Borden. Amongst
several MSS which he left were large materials
for the "Natural History of Kent, Middlesex, and
London." He also published *De origine fontium
sentamen philosophicum*, 8vo; and 9 papers in the
Philos. Transf.

(2.) * **PLOT.** *n. f.* [*plot*, Sax. See **PLAT**.] 1.
A small extent of ground. —

It was a chosen *plot* of fertile land. *Spenser.*

Plant ye with alders or willows a *plot*. *Tuff.*

This liketh moory *plots*. *Drayton.*

Many unfrequented *plots* there are,

Fitted by kind for rape and villany. *Shak.*

Were there but this single *plot* to lose,

This mould of Marcius, they to dust would

grind it. *Shak.*

When we mean to build,

We first survey the *plot*, then draw the model.

Shak.

—Weeds grow not in the wild uncultivated waste,
but in garden *plots* under the negligent hand of a
gardener. *Locke.* 2. A plantation laid out. — Any
less than a goddess could not have made it so per-
fect a *plot*. *Sidney.* 3. A form; a scheme; a plan.
—The law of England never was properly applied
unto the Irish nation, as by a purposed *plot* of go-
vernment. *Spenser.* 4. [Imagined by Skinner to

be derived from *platform*, but evidently contracted from *complot*, Fr.] A conspiracy; a secret design formed against another.—

I have o'erheard a *plot* of death upon him.

Shak.

Nought could cross their *plot*.

Dan.

O think what anxious moments pass between
The birth of *plots* and their last fatal periods!

Addison.

5. An intrigue; an affair complicated, involved and embarrassed; the story of a play, comprising an artful involution of affairs, unravelled at last by some unexpected means.—

Nothing must be sung between the acts,
But what some way conduces to the *plot*:

Roscommon.

Our author

Made him observe the subject and the *plot*. *Pope*.
—They deny the *plot* to be tragical, because its catastrophe is a wedding. *Gay*.—If the *plot* or intrigue must be natural and such as springs from the subject, then the winding up of the *plot* must be a probable consequence of all that went before.

Pope. 6. Stratagem; artifice, in an ill sense.

Frustrate all our *plots* and wiles. *Milton*.
7. Contrivance; deep reach of thought.—

Who says he was not

A man of much *plot*,

May repent that false accusation. *Denham*.

(3.) *PLOT*, in surveying (§ 2. *def.* 1.), the plan or draught of any field, farm, or manor, surveyed with an instrument, and laid down in the proper figure and dimensions.

(4.) *PLOT* (§ 2. *def.* 5.), in dramatic poetry, is sometimes used for the fable of a tragedy or comedy, but more properly for the knot or intrigue, which makes the *embarrass* of any piece. See *POETRY*.

(1.) * *To PLOT*. *v. a.* [from the noun.] 1. To plan; to contrive.—

With shame and sorrow filled;

Shame for his folly; sorrow out of time

For *plotting* an unprofitable crime. *Dryden*.

2. To describe according to ichnography.—This reatife *plotteth* down Cornwall as it now standeth, or the particulars. *Carew*.

(2.) * *To PLOT*. *v. n.* 1. To form schemes of mischief against another, commonly against those in authority.—

The subtle traitor

This day had *plotted* in the council house

To murder me.

Shak.

—The wicked *plotteth* against the just. *Pf.* xxxvii.
2.—

He who envies now thy state,

Who now is *plotting* how he may seduce

Thee from obedience.

Milton.

The wolf that round th' inclosure prowld

To leap the fence, now *plots* not on the fold.

Dryden.

3. To contrive; to scheme.—The count tells the marquis of a flying noise, that the prince did *plot* to be secretly gone; to which the marquis answered, that though love had made his highness steal out of his own country, yet fear would never make him run out of Spain. *Wotton*.

PLOTÆ, islands on the coast of Ætolia.

PLOTINA POMPEIA, a Roman lady who was

married to the emperor Trajan, when he was in a private station. She accompanied him, and shared his honours when he was elected emperor, and proved herself worthy of such a consort, by her humanity, affability, and liberality to the poor. She accompanied Trajan in his expedition to the East, and on his death brought back his ashes to Rome; where she was treated with all the honours due to her dignity and virtue, by Adrian. She died A. D. 122.

PLOTINOPOLIS. 1. A town of Thrace, built by Trajan, and named after his wife. 2. A town in Dacia.

PLOTINUS, a Platonic philosopher of the third century, born at Lycopolis, in Egypt, A. D. 204. He attended some of the most famous professors of philosophy in Alexandria, but was not satisfied with their lectures. But, upon hearing Ammonius, he became so fond of his system, that he studied under him for 12 years. He then travelled for farther improvement into Persia and India, and followed the Roman army, in 243, when the emperor Gordian set out on his unfortunate expedition against the Persians; in which he lost his life, and our philosopher narrowly escaped sharing his fate. In 244 he returned to Rome, where he read philosophical lectures, which were attended by people of all ranks, patricians and plebeians, and rendered him very popular. Among other learned pupils the celebrated Porphyry attended him six years; and his reputation for integrity and virtue, as well as learning, became so great, that his arbitration was often applied for, to decide or prevent law-suits; and many persons of property, when dying, left their children to his tutorage, and their estates to his care. The emperor Gallienus and his empress Salonina had so great an esteem for him, that they once intended to rebuild the city of Campania, and assign it over, with its territory, to Plotinus, to be colonized by a set of *Philosophers*, upon the plan of Plato's republic; but were dissuaded by some courtiers who envied his merit. But, with all his virtues and merits, Plotinus held some very absurd opinions. He not only entertained the utmost contempt for all terrestrial enjoyments, but despised *matter* so philosophically, that he was *asbamed* that his soul was obliged to be lodged in a *body*, which he considered as a *prison*. From this principle he lived not only very temperately, but even so abstemiously, that he slept very little, and hence there is reason to believe his brain was in some degree affected; for, though a Pagan to the end of his life, he pretended to many of those visions and illuminations by the Deity, which the superstitious devotees in all ages and religions have boasted of. In short he boasted, that he not only had a familiar dæmon or angel, like Socrates, but that he had even often been *united to the Deity* himself. Yet of this deity he appears to have entertained some very confused notions. He wrote two books to prove that "*All being is one and the same*;" which is the very atheistical doctrine of Spinoza; and he inquires in another tract, "*Whether there are many souls or only one*?" Full of these romantic metaphysical ideas and uncertainties, he died, A. D. 270, aged 66, with these words: "I am labouring with all my might

to

to return the *divine part of me* to that *Divine Whole* which fills the universe!" He left 54 treatises on various subjects; which his disciple Porphyry collected and arranged in six *Enneades*, or volumes of *nine* tracts each; and published with his life. Marcellus Ficinus, at the desire of Cosmo de Medici, translated this work into Latin, which was published at Basil in 1559; and reprinted along with the Greek in 1580, folio.

(1.) PLOTIUS, Lucius, a Roman poet, who flourished in the time of Marius, and celebrated that hero's exploits in his poems.

(2.) PLOTIUS GALLUS, Lucius, a native of Gaul, who first taught oratory at Rome in Latin. Cicero himself was one of his pupils. *Cicero de Orat.*

(3.) PLOTIUS TUCCA, a learned Roman, who flourished in the Augustan age; and was intimate with all the literati of that dignified period. He was particularly the friend of Horace, Mæcenas, and Virgil, who left him his heir. Augustus appointed him along with Varius to review Virgil's *Æneid*. *Hor. l. Sat. 5. v. 40.*

• PLOTTER. *n. f.* [from *plot*.] 1. Conspirator. —Colonel, we shall try who's the greater *plotter* of us two; I against the state, or you against the petticoat. *Dryden.* 2. Contriver.—

An irreligious Moor,

Chief architect and *plotter* of these woes. *Shak.*

(4.) PLOTTNITZ, a town of Silesia, in Neissa; three miles west of Patschkau.

(5.) PLOTTNITZ, a lake of Silesia, in Oels; four miles east of Millitsch.

PLOTUS, or DARTER, in ornithology, a genus of birds belonging to the order palmipedes. The bill is long and sharp-pointed; the nostrils are merely a long slit placed near the base, the face and the chin are bare of feathers, the neck is very long, and the legs are short. They have four toes webbed together. There are three species, and three varieties of the second of these.

1. PLOTUS ANHINGA, the *white-bellied darter*, is not quite so big as a mallard; but its length from the point of the bill to the end of the tail is ten inches. The bill is three inches long, straight and pointed, the colour is greyish, with a yellowish base, the neck long and slender the upper part of the back and scapulars are of a dusky black colour, the middle of the feathers are dashed with white, the lower part of the back, &c. are of a fine black colour, the under parts from the breast are silvery white, the smaller wing coverts and those in the middle are dusky black, the larger ones are spotted with white, and the outer ones are plain black, the tail feathers are twelve, broad, long, and glossy black, the legs and toes are of a yellowish grey. This species inhabit Brasil, and are exceedingly expert in catching fish. Like the corvairant, they build nests on trees, and roost in them at night. They are scarcely ever seen on the ground; being always on the highest branches of trees on the water, or such as grow in the moist savannas on river sides. When at rest, they sit with the neck drawn in between the shoulders like the heron. The flesh is in general very fat, but has an oily, rank, and disagreeable taste like that of a gull. See ANHINGA.

2. PLOTUS CAYENNENSIS, the *anhinga* of

Cayenne, *black-bellied anhinga*, is as large as a common duck, with a very long neck and a long sharp-pointed straight bill. The upper part of the bill is of a pale blue, and the lower is reddish; the eyes are very piercing, the head, neck, and upper part of the breast are light brown; both sides of the head and the upper part of the neck are marked with a broad white line; the back, scapulars, and wing coverts are marked with black and white stripes lengthwise, in equal portions; the quill feathers, the belly, thighs, and tail, are of a deep black colour, the tail is very long and slender, the legs and feet are of a pale green colour, and the four toes, like those of the corvairant, are united by webs. This species is found in Ceylon and Java. They generally sit on the shrubs that hang over the water, and when they shoot out their long slender necks, are often taken for serpents at first sight. Mr Latham describes three varieties of this species, which are all equal in size to the common birds of the species. The first and the second varieties, which last Mr Latham calls the *black darter*, inhabit Cayenne; and the third, or *rufous darter*, inhabits Africa, particularly Senegal, where it is called *kandar*.

3. PLOTUS SURINENSIS, the *Surinam darter*, is about 13 inches long, being about the size of a teal. The bill is of a pale colour, and about 1½ inches in length; the irides are red; the crown of the head is black, and the feathers behind form a sort of crest; the neck, as in the other species, is long and slender; the cheeks are of a bright bay colour; from the corner of each eye there comes a line of white; the sides and back part of the neck are marked with longitudinal lines of black and white; the wings are black, and the tail is dusky brown; it is also tipped with white and shaped like a wedge; the breast and belly are white; the legs short, but very strong, and of a pale dusky colour; the four toes are joined by a membrane, and barred with black. This species inhabits Surinam, frequenting the sides of rivers and creeks, where it feeds on small fish and insects, especially on flies, which it catches with great dexterity. When domesticated, which often happens, the inhabitants call it the *surinam*. Authors have differed exceedingly concerning the genus to which this species belongs, as it is found to differ from the others in some pretty essential characters; it agrees, however, in so many, and those the most essential, as sufficiently to authorize classing it with this genus. See *Latham's Synopsi*, vol. iii. part 2. p. 627.

PLOTZKAU, a town of Upper Saxony in Anhalt Bernberg, five miles SSW. of Bernberg, and 24 WSW. of Dessau.

PLOUAY, a town of France, in the department of the Morbihan; 7½ miles N. of Hennebont, and 9 SSE. of Faouet.

PLOUBALAY, a town of France, in the department of the North Coasts; 6 miles SW. of St Malo, and 8 N. of Dinan.

PLOUCADEUC, a town of France, in the department of the Morbihan; 3 miles S. of Malestroit, and 4½ N. of Rochefort.

PLOULDALMEZEAU, a town of France, in the department of Finistère, 11 miles NNW. of Brest, and 13 W. of Lescleven.

PLoudAMEL,

PLOUDEMEL, a town of France, in the department of the Finistère; 3 miles S. of Lefneven.
PLOUER, a town of France, in the dep. of the North Coast; 4½ miles NNE. of Dinan, and ESE. of Lamballe.

(1.) * **PLOVER**. *n. f.* [*pluvier*, Fr. *pluvialis*, Lat.] A lapwing. A bird.—Of wild birds. Cornall hath quail, rail, partridge, pheasant, and *pluvier*. *Carew*.—

The bittern knows his time; or from his shore
 The plover, when to scatter o'er the heath
 And sing. *Thomson's Spring*.

(2.) **PLOVER**. See **CHARADRIUS**, No 3, 9, 12, 13. These birds usually fly in exceedingly large flocks in the places they frequent; 20,000 or 30,000 have been seen in a flock. They generally come to us in Sept. and leave us about the end of March. In cold weather they are found very commonly on lands lying near the sea, in quest of food; but in thaws and open seasons they go higher up in the country. They feed on plowed lands, and are very cleanly. When they roost, they squat on the ground like ducks or geese, or from trees or hedges, when the weather is calm; but when it is stormy, they often get under shelter. In wet weather they do not sleep in the night at all, but run about picking up the worms; they crawl out of the ground; during this feeding they are continually making a small cry, but serves to keep them together; and in the morning they take flight. Plovers are very easily taken at the time of their first coming over, when they have not got any other birds mixed among them; but when they afterwards pick up the teal and other shy birds among them, it becomes more difficult. The best season for taking them is in the beginning of Oct. After this they grow timorous, and are not easily taken again till March, which is the time of their coupling. The NW. wind is disadvantageous to the taking of them; and in general, great regard is to be paid to the force of the wind in the setting of the nets. All fowls fly against the wind when the land lies flat way; and the nets for taking them are therefore to be placed in a proper direction, accordingly.

PLOUERDAT, a town of France, in the dep. of the Morbihan, 12 miles W. of Pontivy.

PLOUEZOUCH, a town of France, in the dep. of the Finistère; 4 miles N. of Morlaix, and 7½ E. of St Pol de Leon.

PLOUGASTEL, a town of France, in the dep. of the Finistère, 4½ miles E. of Brest, and 6 SE. of Landerneau.

(1.) * **PLOUGH**. *n. f.* [*plog*, Saxon; *plog*, Danish; *plough*, Dutch.] 1. The instrument with which the furrows are cut in the ground to receive the seed.—

Proud-lin'd loiterers, that never sow;
 Nor put a plant in earth, nor use a *plow*. *Chapm.*
 Look how the purple flower, which the *plough*
 Hath shorn in funder, languishing to die. *Peac.*
 Some *ploughs* differ in the length and shape of
 their beams. *Mort.*—

In ancient times the sacred *plough* employed
 The kings and awful fathers. *Thomson.*
 Tillage; culture of land. 3. A kind of plane.
in/servit.

(2.) **PLOUGH** is by others defined, a machine for turning up the soil by the action of cattle, contrived to save the time, labour, and expence, which, without this instrument, must have been employed in digging the ground, and sifting it for receiving all sorts of seeds. See **RURAL ECONOMY**.

(3.) **PLOUGH, DRILL**. See **DRILLSOWING**. In the Gentleman's Magazine for July 1793, p. 602, Mr Wickins of Pondhead Lodge, New Forest, gives an account of a simplified drill plough, invented by himself. Its importance is increased, he thinks, by the cheapness and easy construction of it, because it can be used upon a small scale by a single man, and upon a larger scale by two men, or a man and boy; so that the inconvenience suffered by horses trampling the ground, &c. is hereby avoided. To the drill for sowing is occasionally annexed a blade for hoeing between the rows: "the good effects of which (says Mr Wickins) are no less obvious from its nurturing the growth of the corn, and producing collateral shoots from the application of fresh soil, but also from its affording the means of extirpating the weeds which are so obnoxious to it." He informs us likewise, that his single hand-drill hath been seen and approved by the Bath Society; and they have in consequence voted him an honorary and corresponding member. Since that time he says, he has very materially improved and simplified it.

(4.) **PLOUGH, GENERAL FORM OF THE**. The general form of the body of a plough is that of a wedge, or very blunt chissel, **AFEDBC**, (fig. 1. *Plate CCLXXVII*.) having the lower corner D of its edge considerably more advanced than the upper corner B; the edge BD and the whole back **AFDB** is in the same perpendicular plane; the bottom **FDB** approaches to a triangular form, acute at D, and square at F; the surface **BCED** is of a complicated shape, generally hollow, because the angle ABC is always greater than FDE: this consequence will be easily seen by the mathematician. The back is usually called the **LAND SIDE** by the ploughmen, and the base **FDE** is called the **SOLE**, and **FE** the **HEEL**, and **BCED** the mould-board. Lastly, the angle **AFE** is generally square, or a right angle, so that the sole has level both as to length and breadth. By comparing this form with attention, the reader will perceive that if this wedge is pulled or pushed along in the direction **FD**, keeping the edge **BD** always in the perpendicular cut, which has been previously made by the coulter, the point D will both raise the earth and shove it to one side and twist it over; and, when the point has advanced from F to D, the sod, which formerly rested on the triangle **DFE**, will be forced up along the surface **BCED**, the line **DF** rising into the position **Df**, and the line **EF** into the position **Ef**.—Had the bottom of this furrow been covered with a bit of cloth, this cloth would be lying on the mould-board, in the position **D/E**: the slice, thus deranged from its former situation, will have a shape something like that represented in fig. 2: As the wedge raises the earth, the earth presses down the wedge; and as the wedge pushes the earth to the right hand, the earth presses the wedge to the left; and thus the plough is strongly pressed, both to the bottom of the furrow by its sole, and also to the firm land

by its back or land side. In short, it is strongly squeezed into the angle formed along the line FD (fig. 1.) by the perpendicular plane *ab* DF and the horizontal plane FDE; and in this manner the furrow becomes a firm groove, directing the motion of the plough, and giving it a resisting support, by which it can perform all parts of its task. We beg our readers to keep this circumstance constantly in mind. It evidently suggests a fundamental maxim in the construction, namely, to make the land-side of the plough an exact plane, and to make the sole, if not a plane, at least straight from point to heel. Any projection would tear up the supporting planes, destroy the directing groove, and expend force in doing mischief. This wedge is seldom made of one piece. To give it the necessary width for removing the earth would require a huge block of timber. It is therefore usually framed of several pieces, which we shall mention in the language of the art.

(5.) **PLOUGH, PARTS OF MR SMALL'S.** Fig. 3. represents the land-side of a plough, such as are made by James Small at Rosebank, near Forth, Mid Lothian. The base of it, CM, is a piece of hard wood, pointed before at C to receive a hollow shoeing of iron CO, called the **SOCK**, and tapering a little towards the hinder end, M, called the **HEEL**. This piece is called the **HEAD** of the plough. Into its fore part, just behind the sock, is mortised a sloping post, AL, called the **SHEATH**, the front of which is worked sharp, forming the edge of the wedge. Nearer the heel there is mortised another piece, PQ, sloping far back, called the **STILT**, serving for a handle to the ploughman. The upper end of the sheath is mortised into the long **BEAM** RH, which projects forward, almost horizontally, and is mortised behind into the stilt. To the fore end of the beam are the cattle attached. The whole of this side of the wedge is fashioned into one plain surface, and the intervals between the pieces are filled up with boards, and commonly covered with iron plates. The **COUNTER**, WFE, is firmly fixed by its shank, W, into the beam, rakes forward at an angle of 45° with the horizon, and has its point E about six inches before the point of the sock. It is brought into the same vertical plane with the land side of the plough, by giving it a knee outward immediately below the beam, and then kneeling it again downward. It is further supported on this side by an iron stay FH, which turns on a pin at F, passes through an eye-bolt I on the side of the beam, and has a nut screwed on it immediately above. When screwed to its proper slope, it is firmly wedged behind and before the shank.—Fig. 4. represents the same plough viewed from above. ST is the right hand or small stilt fixed to the inside of the mould-board LV. Fig. 5. represents the bottom of the wedge. CM is the head, covered at the point by the sock. Just behind the sock there is mortised into the side of the head a smaller piece DE, called the **wrest**, making an angle of 16° with the land-side of the head, and its outside edge is in the same straight line with the side of the sock. From the point to the heel of the head is about 33 inches, and the extreme breadth of the heel is about nine. The side of the

wedge, called the **furrow side**, is formed by the mould-board, which is either made of a block or plank of wood, or of a thick iron plate. The sock drawn in this figure is called a **SPEAR SOCK**, and is chiefly used in coarse or stony ground, which requires great force to break it up. Another form of the sock is represented in the next figure, fig. 6. This is called a **FEATHER SOCK**, and has a cutting edge CF on its furrow side, extending back about ten inches, and to the right hand or furrow side about six. The use of this is to cut the sod below, and detach it from the ground, as the coulter detaches it from the unploughed land.

(6.) **PLOUGH, THE REV. MR CAMPBELL'S IMPROVED.** We shall conclude this article with an account of a plough, recommended by the Scots Highland Society, as extremely proper for a hilly country. The inventor, the Rev. Alex. Campbell, minister at Kilcalmonell in Argyleshire, was honoured with the Society's gold medal, value L.25. A, the sock (fig. 7.); the land-side of which supplies the place of the coulter, and the sole of it serves for a feather; it is 18 inches long, and is made of a plate of iron 12 inches broad when finished, and somewhat under half an inch thick.—B, the head; to be made of iron in a triangular form, 4 inches broad by 2 inches at the thickest part. There are 5 inches of the head fixed in the sock.—C, the beam, 4 inches thick by 5 inches deep, gradually tapered thinner; the length 6 feet.—E, the sheath, must be of the same thickness with the beam above and the head below, and is five inches broad. An iron screw-bolt connects the beam and head behind the sheath.—F, the handles are so made that the slope of the mould-board, which is fixed to one of them, may be the longer and more gradual. They are 5 feet 8 inches long, and 2 feet 4 inches asunder at the ends.—G, the mould-board, consists of 7 rounded sticks 2 inches in diameter; the covert of them is in the plane of the sole, the rest in succession close to each other above it. This makes the mould-board 14 inches broad. To prevent any earth from getting over the mould-board, a thin dale 4 or 5 inches broad is fixed above it. The mould-board, land-side, and sole of the plough, are clad with iron.—The length is 20 inches: this added to 18 inches, the length of the sock, makes the length from point to heel 3 feet 2 inches.—The muzzle or bridle OPH is also of a more convenient and better construction than those commonly in use. By means of the screw-pins at L and M different degrees of land may be given to the plough; the iron rod LH being thereby moved sidewise in the socket LN, and up and down by OP. The rod is 30 inches long, one broad, and half an inch thick. It is hooked into a screw-bolt at H. Two inches of the rod project at N, in the form of an eye, before the muzzle, to receive the hook of the cross-tree. The advantages of this plough are said to be: It is not so liable to be interrupted or turned out of its course by stones, roots, &c. as other ploughs are; nor does it dip so deep as to be liable to be broken by large stones or flags. The motion of the muzzle is also thought an improvement. Another advantage it has over other

other ploughs is, its not being so liable to be choked up by stubble, &c. This we understand to be its chief excellency, and an object much desired in the construction of the plough. Upon the whole, we are informed that this plough is lighter, less expensive, and less liable to go out of trim than the ordinary plough, and that with it two horses can plough land which require four with any other plough. These ploughs are made by Thomas Lindfay, Abbeyhill, Edinburgh, and models are to be seen in the hall of the Highland Society.

(1.) * To PLOUGH. *v. a.* 1. To turn up with the plough.—

Let the Volscians

Plough Rome, and harrow Italy. *Shak.*

No doubt you'd fend the rogue, in fetters bound,

To work in Bridewell, or to *plough* your ground.

Dryden.

—A man may *plough*, in stiff grounds the first time

allowed, an acre a day. *Mortimer.*—You find it

ploughed into ridges and furrows. *Mortimer.* 2. To

bring to view by the plough; with *up*.—Another

of a dusky colour, near black; there are of these

frequently *ploughed up* in the fields of Welden.

Woodward. 3. To furrow; to divide.—

When the prince her fun'ral rites had paid,

He *ploughed* the Tyrrhene seas with sails dis-

played. *Addison.*

With speed we *plough* the watry way,

My power shall guard thee. *Pope.*

1. To tear; to furrow.—

Let

Patient Octavia *plough* thy visage up

With her prepared nails. *Shak.*

(2.) * To PLOUGH. *v. n.* To practise ara-

tion; to turn up the ground in order to sow

seed.—

Rebellion, insolence, sedition,

We ourselves have *ploughed* for, sowed, and

scattered,

By mingling them with us. *Shak.*

—Doth the ploughman *plough* all day to sow. *Jf.*

xviii. 24.—They only give the land one *ploughing*.

Mortimer.

PLOUGH-BOTE. *n. f.* in ancient customs, a

privilege granted to tenants by landholders, of

cutting wood.

* PLOUGH-BOY. *n. f.* [*plough* and *boy*.] A boy

that follows the plough; a coarse ignorant boy.

—A *plough-boy*, that has never seen any thing but

hatched houses and his parish church, imagines

that thatch belongs to the very nature of a house.

Vattu.

* PLOUGHER. *n. f.* [from *plough*.] One who

ploughs or cultivates ground.—The country

people themselves are great *ploughers*. *Spenser.*

PLOUGH-GANG, or } *n. f.* a term used in Scot-

PLOUGH-GATE, } land, for as much ground

as a ploughman will usually labour in a day.

PLOUGHING. *n. f.* in agriculture, the turn-

ing up the earth with a plough. See RURAL

ECONOMY.

* PLOUGHLAND. *n. f.* [*plough* and *land*.] A

arm for corn.—

Who hath a *ploughland* casts all his seed-corn

there. *Donne.*

VOL. XVII. PART II.

—In this book are entered the names of the manors or inhabited townships, the number of *ploughlands* that each contains. *Hale.*

(1.) * PLOUGHMAN. *n. f.* [*plough* and *man*.]

1. One that attends or uses the plough; a cultivator of corn.—

When shepherds pipe on oaten straws,

And merry larks are *ploughmen's* clocks. *Shak.*

—To serve the needs of nature by the labours of

the *ploughman*. *Taylor.*—

The careful *ploughman* doubting stands.

Milton.

Your reign no less assures the *ploughman's*

peace. *Waller.*

—The shepherd gains by peace, and the soldiers

by war, the shepherd by wet seasons, and the

ploughmen by dry. *Temple.*—

Who can cease t' admire

The *ploughman* consul in his course attire?

Dryden.

One

My *ploughman's* is, t'other my shepherd's son.

Dryden.

2. A gross ignorant rustic.—

Hard as the palm of *ploughman*. *Shak.*

3. A strong laborious man.—A weak stomach will

turn rye bread into vinegar, and a *ploughman* will

digest it. *Arbutnot.*

(2.) PLOUGHMAN'S SPIKENARD, in botany.

See BACCHARIS, and CONYZA.

* PLOUGHMONDAY. *n. f.* The Monday after

twelfth day.—

Ploughmonday, next after the twelfth day is past,

Bids out with the plough, the worst husband is

last. *Tupper.*

* PLOUGHSARE. *n. f.* [*plough* and *share*.] The

part of the plough that is perpendicular to the

coulters.—As the earth was turned up, the *plough-*

share lighted upon a great stone. *Sidney.*—The

pretty innocent walks blindfold among burning

ploughshares without being scorched. *Addison.*

PLOUGONVEN, a town of France, in the

department of Finistère; 5 miles SE. of Morlaix,

and 15 N. of Carhaix.

PLOUGONVERT, a town of France, in the

department of the North Coasts; 15 miles WSW.

of Guingamp.

PLOUGUENAS, a town of France, in the

department of the North Coasts; 7 miles NNE.

of Loudéac, and 13 SSW. of Lamballe.

PLOUGUERNEAU, a town of France, in the

department of Finistère; 6 miles NNW. of

Lefneven, and 13 N. of Brest.

PLOUHA, a town of France, in the department

of the North Coasts; 9 miles ESE. of Pontrien,

and 11 SE. of Lefneven.

PLOUNEVERTER, a town of France, in the

department of the Finistère; 5 miles SE. of

Lefneven.

(1.) PLOUNEVEZ, a town of France, in the

department of Finistère; 6 miles NE. of Lefneven,

and 10 WSW. of Pol de Leon.

(2.) PLOUNEVEZ DE FAOU, a town of France,

in the department of the Finistère; 10 miles W.

of Carhaix, and 10½ E. of Chateaulin.

PLOUVARD, a town of France, in the depart-

ment of the North Coasts; 6 miles W. of St Brieux,

and 7 ESE. of Guingamp.

R I T

PLOUVORN,

PLOUVORN, a town of France, in the department of Finistère; $\frac{7}{8}$ miles W. of Morlaix, and 11 NE. of Landerneau.

PLOUZANE, a town of France, in the department of Finistère; 3 miles S. of St Renan, and $\frac{4}{5}$ W. of Brest.

PLOUZEVEDE, a town of France, in the department of Finistère; $\frac{7}{8}$ miles SW. of St Pol de Leon, and 8½ E. of Lescnven.

To PLOW. *v. a.* and *v. n.* See To PLOUGH, N° 1. and 2. This spelling is now most generally used in the verbs and participles; but PLOUGH is still retained for the noun and all its compounds and derivatives, except the verbal ones.

PLOWDEN, Edmund, serjeant at law, the son of Humphrey Plowden of Plowden, in Shropshire, of an ancient and genteel family. He was first a student at the university of Cambridge, where he studied philosophy and medicine, for three years. He then removed to Oxford, where, having studied about four years more, in 1552 he was admitted to the practice of physic and surgery; but after all gave up both, entered the Middle Temple, and began to read law. Wood says, that in 1557 he was summer reader to that society, and Lent-reader three years after, being then serjeant and orator of the law. He died in 1584, aged 67. He married the daughter of William Sheldon, of Boleyn, in Worcestershire; by whom he had a son, who died soon after his father. He wrote, 1. Commentaries or Reports of divers Cases, &c. in the reigns of King Edward VI. Queen Mary, and Queen Elizabeth; London, 1571, 78, 99, 1613, &c. Written in the old Norman language. 2. Queries, or a Moot-book of cases, &c. translated, methodized, and enlarged, by H. B. of Lincoln's-Inn; London, 1662, 8vo.

PLOZEVET, a town of France, in the department of the Finistère; 4 miles SE. of Pont Croix, and 12 W. of Quimper.

PLUCHE, Antony, an elegant writer, born at Rheims in 1668, who merited, by his engaging manners and proficiency in the belles lettres, the appointment of humanist in the university of that city. Two years after, he obtained the professor of rhetoric's chair, and was admitted into holy orders. Clermont, bishop of Laon, informed of his talents, gave him the direction of the college of his episcopal city. By his industry and superior knowledge, a proper order and subordination soon took place in it; but some particular opinions respecting public affairs obliged him to resign his office. The intendant of Rouen, at the request of the celebrated Rollin, entrusted him with the education of his son. Abbe Pluche having filled that place with success and honour, left Rouen and went to Paris, where, by the patronage of some literary friends, and his own excellent writings, he acquired great reputation. He published, 1. *Le Spectacle de la Nature* (Nature Displayed), in 9 vols. in 1700, a work equally instructive and entertaining. 2. *Histoire du Ciel*, or History of the Heavens, in 2 vols. in 1700, in two parts. The first contains some learned inquiries into the origin of the poetic heavens. It is nearly a complete mythology. The second is the history of the opinions given by philosophers respecting the formation of the world. The author shows the

inutility, the inconsistency, and uncertainty, of the most esteemed systems, and concludes with pointing out the excellence and sublime simplicity of the Mosaic account. 3. *De Linguarum artificio*; a work which he translated with this title, *La Mécanique des Langues*, in 1700. 4. Harmony of the Psalms and the Gospel, or a Translation of the Psalms and Hymns of the Church, with Notes relative to the Vulgate, the Septuagint, and Hebrew Text; Paris, 1764, 12mo. In 1749 Abbe Pluche retired to Varenne St Maure, where he gave himself up entirely to devotion and study, and where he died of an apoplexy, on the 20th of November 1761, aged 73. He possessed those qualities which form the scholar, and practised the morals of an honest man, and a Christian. Some Deists having been surprised that, in matters of faith, he should think and speak like the vulgar, his answer was, "I glory in doing so; it is infinitely more rational to believe the word of God, than to follow the glimmering lights of a reason which is limited and subject to error."

* PLUCK. *n. s.* [from the verb.] 1. A pull; a draw; a single act of plucking.—Birds kept coming and going all day; but so few at a time, that the man did not think them worth a pluck. *L'Etranger*.—Were the ends of the bones dry, they could not, without great difficulty, obey the plucks and attractions of the motory muscles. *Ray*. 2. *Plugbt*, Erse. I know not whether derived from the English, rather than the English from the Erse.] The heart, liver, and lights of an animal.

* To PLUCK. *v. a.* [*ploccian*, Saxon; *plocken*, Dutch.] 1. To pull with nimbleness or force; to snatch; to pull; to draw; to force on or off; to force up or down; to act upon with violence. It is very generally and licentiously used, particularly by *Shakespeare*. It has often some particle after it as *down*, *off*, *on*, *away*, *up*, *into*.—It seemed better unto that noble king to plant a peaceable government among them, than by violent means to pluck them under. *Spenser*.

That high royalty was ne'er pluck'd off. *Shak.*
Pluck down my officers. *Shak.*

Can't thou not
Pluck from the memory a rooted sorrow? *Shak.*
—When youth with comeliness plucked all gaze his way. *Shak.*

I gave my love a ring;
He would not pluck it from his finger, for the wealth
That the world masters. *Shak.*
You pluck a thousand dangers on your head. *Shak.*

Dive into the bottom of the deep,
And pluck up drowned honour by the locks. *Shak.*

—I will pluck them up by the roots out of my land. 2 *Chron.*—Pluck away his crop with his feathers. *Lev. i. 16.*—A time to pluck up that which is planted. *Eccles. iii. 2.*—They pluck off their skin from off them. *Mic. iii. 2.*

Dispatch 'em quick, but first pluck out their tongues,
Left with their dying breath they sow sedition. *Addison.*

Beneath this shade the weary peasant lies,
Plucks the broad leaf. *Gay.*
From

From the back

Of herds and flocks, a thousand tugging bills

Pluck hair and wool. *Thomson.*

2. To strip of feathers.—Since I *plucked* geese, I knew not what it was to be beaten. *Shak.*

I come to thee from plumc-pluck'd Richard.

Shak.

3. To *pluck* up a heart or spirit. A proverbial expression for taking up or refusing of courage.—He willed them to *pluck* up their hearts, and make all things ready for a new assault. *Knolles's Hist. of the Turks.*

PLUCKEMIN, a trading town of New Jersey, in Somerset county, 28 miles N. of Princeton: so named from one of its first inhabitants, an old Irishman, who was noted for his address in *taking* in strangers.

* **PLUCKER**. *n. f.* [from *pluck*.] One that plucks.—

Thou setter up and *pluck*er down of kings!

Shak.

—Let the *pluckers* tie it up in handfuls. *Mortimer.*

(1.) **PLUDENTZ**, a county of Germany, in the Tyrol, purchased, with its capital, in 1376, by Leopold D. of Austria.

(2.) **PLUDENTZ**, the capital of the above county, is seated on the Ill, in a pleasant plain; 65 miles W. of Inspruck, and 85 NNW. of Trent. In 1533, it was almost destroyed by an earthquake, and in 1638 it was burnt. Lon. 12. 10. E. Lat. 47. 10. N.

PLUDESCH, a town of Tyrol, in the county of Pludentz; 6 miles N. of Pludentz.

(1.) **PLUE**, a lake of North America. Lon. 93. 40. W. Lat. 48. 50. N.

(2.) **PLUE**, or **LA PLUE**, a river of N. America, which runs from lake La Plue into the Lake of the Woods.

(1.) * **PLUG**. *n. f.* [*plugg*, Swedish; *pluggbe*, Dutch.] A stopple; any thing driven hard into another body to stop a hole.—Shutting the valve with the *plug*, draw down the sucker to the bottom. *Boyle*.—The fighting with a man's own shadow, consists in the brandishing of two sticks grasped in each hand, and loaded with *plugs* of lead at either end. *Addison*.—In bottling wine, fill your mouth full of corks, together with a large *plug* of tobacco. *Swift*.

(2.) **PLUGS**, in naval affairs, pieces of timber, formed like the frustum of a cone, and used to stop the haufe-holes and the breaches made in the body of a ship by cannon balls; the former are called *haufe plugs*, the latter *shot plugs*, and are formed of various sizes, in proportion to the holes made by the different sizes of shot, which may penetrate the ship's sides or bottom in battle. They are always ready for this purpose.

* To **PLUG**. *v. a.* [from the noun.] To stop with a plug.—A tent *plugging* up the orifice. *Sharp*.

PLUKENET, Leonard, an English physician, born in 1642, one of the most excellent and laborious botanists of any age. He was author of *Phytographia Plucentiana*, a work much esteemed, *Almagestum Britannicum*, and other works of the like kind, on which he spent the greatest part of his life and fortune. He was appointed superin-

tendant of the garden at Hampton Court, by Charles II. with the title of Royal Professor of Botany. He died about 1706. His *Opera Botanica*, with cuts, were printed at London in 6 vols. folio, in 1720.

PLUKENETIA, in botany, a genus of the monadelphina order, belonging to the monoclea class of plants; and in the natural method ranking in the 38th order, *Tricocce*.

(1.) * **PLUM**. *n. f.* [*plum*, *plumtree*, Sax. *blumme*, Danish.] A custom has prevailed of writing *plumb*, but improperly. 1. A fruit.—The flower consists of 5 leaves which are placed in a circular order, and expand in form of a rose, from whose flower-cup rises the pointal, which afterwards becomes an oval or globular fruit, having a soft fleshy pulp, surrounding an hard oblong stone, for the most part pointed; to which should be added, the footstalks are long and slender, and have but a single fruit upon each. The species are; 1. The jeanhative, or white primordian. 2. The early black damask, commonly called the Morocco *plum*. 3. The little black damask *plum*. 4. The great damask violet of Tours. 5. The Orleans *plum*. 6. The Fotheringham *plum*. 7. The Perdrigon *plum*. 8. The violet Perdrigon *plum*. 9. The white Perdrigon *plum*. 10. The red imperial *plum*, sometimes called the red bonum magnum. 11. The white imperial bonum magnum; white Holland or Mogul *plum*. 12. The Cheston *plum*. 13. The apricot *plum*. 14. The maitre claudie. 15. La roche courbon, or diaper rogue; the red diaper *plum*. 16. Queen Claudia. 17. Myrobalan *plum*. 18. The green gage *plum*. 19. The cloth of gold *plum*. 20. St Catharine *plum*. 21. The royal *plum*. 22. La mirabelle. 23. The lignole *plum*. 24. The empress. 25. The monfieur *plum*: this is sometimes called the Wentworth *plum*, both resembling the bonum magnum. 26. The cherry *plum*. 27. The white pear *plum*. 28. The muske *plum*. 29. The St Julian *plum*. 30. The black bullace-tree *plum*. 31. The white bullace-tree *plum*. 32. The black-thorn or sloe-tree *plum*. *Miller*.—Philosophers in vain enquired, whether the summum bonum consisted in riches, bodily delights, virtue, or contemplation? they might as reasonably have disputed, whether the best relish were in apples, *plums*, or nuts? *Locke*.

2. Raisin; grape dried in the sun.—

I will dance and eat *plums* at your wedding.

Shak.

3. [In the cant of the city.] The sum of one hundred thousand pounds.—By the present edict, many a man in France will swell into a *plum*, who fell several thousand pounds short of it the day before. *Addison*.—

The miser must make up his *plum*. *Prior*.—By fair dealing John had acquired some *plums*, which he might have kept, had it not been for his law-suit. *Arbutnot*.—

Alas; they fear a man will cost a *plum*. *Pope*. 4. A kind of play, called How many *plums* for a penny? *Ains*.

(1.) **PLUM**, BAY. See **PSIDIUM**.

(3.) **PLUM**, BRASILIAN. See **SPONDIAS**.

(4.) **PLUM**, COCOA. See **CHRYSOBALANUS**.

(5.) **PLUM**, INDIAN DATE. See **DIOSPYROS**.

R T T 2 (6.)

(6.) PLUM, PICHUMON. See DIOSPYROS, N° 2.

(7.) PLUM-TREE, in botany. See PRUNUS.

(1.) * PLUMAGE. *n. f.* [*plumage*, Fr.] Feathers; suit of feathers.—The *plumage* of birds exceeds the pilosity of beasts. *Bacon*.—

Say, will the falcon, stooping from above,
Smit with her varying *plumage*, spare the dove?
Pope.

(2.) PLUMAGE, the covering of birds. See ORNITHOLOGY, *Sec. I.*, § III.

PLUMAU, a town of Austria, 7 m. NW. of Hooren.

(1.) * PLUMB. *n. f.* [*plumb*, Fr. *plumbum*, Lat.] A plummet; a leaden weight let down at the end of a line.—If the *plumb* line hang just upon the perpendicular, when the level is set flat down upon the work, the work is level. *Mason's Mec. Exerc.*

(2.) * PLUMB. *adv.* [from the noun.] 1. Perpendicularly to the horizon,—

Flutt'ring his pennons vain, *plumb* down he falls. *Milton*.

—If all these atoms should descend *plumb* down with equal velocity, being all perfectly solid and imporous, and the vacuum not resisting their motion, they would never the one overtake the other. *Ray on the Creation*. 2. It is used for any sudden descent, a *plumb* or perpendicular being the short passage of a falling body. It is sometimes pronounced ignorantly *plump*.—Is it not a sad thing to fall thus *plumb* into the grave? well one minute and dead the next. *Collier*.

(3.) PLUMB ISLAND, an island near the coast of Massachusetts, abounding with beach plumb trees; about 9 miles long, and half a mile broad; extending from the mouth of the Ipswich to that of the Merrimack, on the S. side; and separated from the main land by a narrow sound. It has light-houses on the N. end, and the remains of a fort; besides several houses erected by the Marine Society, and provided with fuel and other necessities, for the relief of those who may be shipwrecked on the coast. Lon. 70. 47. W. Lat. 42. 25. to 43. 4. N.

(4.) PLUM ISLAND, an island of New York, on the NE. coast of Long Island, about a mile from South-hold, containing seven families, and 800 acres; which are fertile, and produce wheat, corn, and pasture; feed sheep and black cattle; and thence abound with butter, cheese, and wool.

(5.) PLUMB LINE, among artificers, denotes a perpendicular to the horizon; so called, as being commonly erected by means of a plummet. See PLUMMET, § 2.

* To PLUMB. *v. a.* [from the noun.] 1. To found; to search by a line with a weight at its end.—The most experienced seamen *plumbed* the depth of the channel. *Swift*. 2. To regulate any work by the plummet.

(1.) PLUMBAGO, in botany, LEAD-WORT; a genus of the monogynia order, belonging to the pentandria class of plants. There are 4 species; the most remarkable are

1. PLUMBAGO EUROPEA. It grows naturally in the S. of Europe, and has a perennial root striking deep into the ground. There are many slender channelled stalks, about three feet high, terminated by tufts of small funnel-shaped flowers, of a blue or white colour. It is propagated by seeds, and by parting the roots.

2. PLUMBAGO ZEYLONICA grows naturally in both the Indies. The upper part of the stalk and empalement are covered with a glutinous juice, which catches the small flies that light upon it. It is too tender to thrive in the open air in this country.

(II.) PLUMBAGO, in mineralogy, Black Lead, or Carburet of Iron, as it is now called by Chemists. See CHEMISTRY, *Index*; LEAD N° III; and MINERALOGY, *Part II. Chap. VII. Class IV. Ord. VI. Gen. III. Sp. 1.*

(1.) * PLUMBER. *n. f.* [*plombier*, Fr.] One who works upon lead. Commonly written and pronounced *plummer*.

(2.) PLUMBER, in geography, a town of Dorsetshire, on the Dirlifish, 2½ miles from Lidlinch.

(1.) * PLUMBERY. *n. f.* [from *plumber*]. Works of lead; the manufactures of a plumber. Commonly spelt *plummery*.

(2.) PLUMBERY, is the art of casting and working lead, and using it in building. As this metal melts soon and with little heat, it is easy to cast it into figures of any kind, by running it into moulds of brass, clay, plaster, &c. But the chief articles in plumbery are sheets and pipes of lead; which make the basis of the plumbers work. 1. In casting *sheet-lead*, a table or mould is made use of, which consists of large pieces of wood well jointed, and bound with bars of iron at the ends; on the sides of which runs a frame consisting of a ledge or border of wood, 3 inches thick and 4 inches high from the mould, called the *sharps*: The ordinary width of the mould, within these sharps, is from 4 to 5 feet; and its length is 16, 17, or 18 feet. This should be something longer than the sheets are intended to be, that the end where the metal runs off from the mould may be cut off, because it is commonly thin or uneven, or ragged at the end. It must stand very level in breadth, and something falling from the end in which the metal is poured in, viz. about an inch or an inch and a half in the length of 16 or 17 feet or more, according to the thinness of the sheets wanted; for the thinner the sheet, the more declivity the mould should have. At the upper end of the mould stands the pan, which is a concave triangular prism, composed of two planks nailed together at right angles, and two triangular pieces fitted in between them at the ends. The length of this pan is the whole breadth of the mould in which the sheets are cast; it stands with its bottom, which is a sharp edge, on a form at the end of the mould, leaning with one side against it; and on the opposite side is a handle to lift it up by, to pour out the melted lead; on that side of the pan next the mould are two iron hooks to take hold of the mould, and prevent the pan from slipping while the melted lead is pouring out of it into the mould. The pan is lined on the inside with moistened sand, to prevent it from being fired by the hot metal. The mould is also spread over, about two inches thick, with sand sifted and moistened, which is rendered perfectly level by moving over it a piece of wood called a *strike*, and smoothing it over with a smoothing plane, which is a plate of polished brass, about one-fourth of an inch thick and 9 inches square, turned up on all the 4 edges, and with a handle fitted on to the upper or concave

cave side. The sand being thus smoothed, it is fit for casting sheets of lead; but if they would cast a cistern, they measure out the bigness of the four sides; and having taken the dimensions of the front or fore-part, make mouldings by pressing long slips of wood, which contain the same mouldings, into the level sand; and form the figures of birds, beasts, &c. by pressing in the same manner leaden figures upon it, and then taking them off, and at the same time smoothing the surface where any of the sand is raised up by making these impressions upon it. The rest of the operation is the same in casting either cisterns or plain sheets of lead. But before we proceed to mention the manner in which that is performed, it will be necessary to give a more particular description of the *strike*. The *strike*, then, is a piece of board about 5 inches broad, and something longer than the breadth of the mould in the inside; and at each end is cut a notch about two inches deep, so that when it is used it rides upon the sharps with those notches. Before they begin to cast, the *strike* is made ready by tacking on two pieces of an old hat on the notches, or by slipping a case of leather over each end, to raise the under side about one 8th of an inch or more above the sand, according as they would have the sheet to be in thickness; then they tallow the under edge of the *strike*, and lay it across the mould. The lead being melted, it is put into the pan with ladles, in which, when there is a sufficient quantity for the present purpose, the scum of the metal is swept off with a piece of board to the edge of the pan, letting it settle on the sand, which is thus prevented from falling into the mould at the pouring out of the metal. When the lead is cold enough, which must be regulated according to the thickness of the sheets wanted, and is known by its beginning to stand with a shell or wall on the sand round the pan, two men take the pan by the handle, or else one of them lifts it by the bar and chain fixed to a beam in the ceiling, and pour it into the mould, while another man stands ready with the *strike*, and, as soon as they have done pouring in the metal, puts on the mould, sweeps the lead forward, and draws the overplus into a trough prepared to receive it. The sheets being thus cast, nothing remains but to roll them up or cut them into any measure wanted: but if it be a cistern, it is bent into four sides, so that the two ends may join the back, where they are soldered together; after which the bottom is soldered up. *IL To cast PIPES, without soldering*, they have a little mill, with arms or levers, to turn it withal. The moulds are of brass, and consist of two pieces, which open and shut by books and hinges, their inward caliber or diameter being according to the size of the pipe, usually two feet and a half. In the middle is placed a core or round piece of brass or iron, somewhat longer than the mould, and of the thickness of the inward diameter of the pipe. This core is passed through two copper rundles, one at each end of the mould, which they serve to close; and to these is joined a little copper tube about two inches long, and of the thickness of the leaden pipe is intended to be of. By means of these tubes, the core is retained in the middle of the cavity of the mould. The core being in the mould,

with the rundles at its two ends, and the lead melted in the furnace, they take it up in a ladle, and pour it into the mould by a little aperture at one end, made in the form of a funnel. When the mould is full, they pass a hook into the end of the core, and, turning the mill, draw it out; and then opening the mould, take out the pipe. If they desire to have the pipe lengthened, they put one end of it in the lower end of the mould and pass the end of the core into it; then shut the mould again and apply its rundle and tube as before, the pipe just cast serving for a rundle, &c. at the other end. Things being thus replaced, they pour in fresh metal, and repeat the operation till they have got a pipe of the length required. For making pipes of sheet-lead, the plumbers have wooden cylinders, of the length and thickness required; and on these they form their pipes by wrapping the sheet around them, and folding up the edges all along them. The lead which lines the Chinese tea-boxes is reduced to a thinness which we are informed European plumbers cannot imitate. The following account of the process by which the plates are formed was communicated to a writer in the Gentleman's Magazine by an intelligent mate of an East Indianman. The caster fits by a pot containing the melted metal; and has two large stones, the under one fixed, the upper moveable, directly before him. He raises the upper stone by pressing his foot upon the side of it; and with an iron ladle pours into the opening a proper quantity of the fluid metal. He then immediately lets fall the upper stone, and by that means forms the lead into a thin irregular plate, which is afterwards cut into a proper shape. The surfaces of the stones, where they touch each other, are exactly ground together.

PLUMB-PUDDING. See PLUMPUDDING, N° 1. and 2.

(1.) PLUMBUM, [Lat.] LEAD. See LEAD.

(2.) PLUMBUM CORNEUM, a combination of lead with the mercuric acid. See CHEMISTRY.

* PLUMCAKE, *n. f.* [*plum* and *cake*.] Cake made with raisins.—

He cramm'd them till their guts did ache
With caudle, custard, and plumcake. *Hudib.*

(1.) * PLUME, *n. f.* [*plume*, Fr. *pluma*, Lat.] 1. Feather of birds.—

We'll pull his *plumes*, and take away his train. *Shak.*

Wings he wore of many a coloured *plume*. *Milt.*

—They appear made up of little bladders, like those in the *plume* or stalk of a quill. *Grew's Museum.* 2. Feather worn as an ornament; *Chapman* uses it for a crest at large.—

Your enemies with nodding of their *plumes*
Fan you into despair. *Shak. Coriolanus.*

With this againe, he rusht upon his guest,
And caught him by the horie-haire *plume*, that
dangl'd on his crest. *Chapman.*

—Ostridge feathers are common, and the ordinary *plume* of Janizaries. *Brown.*—

His high *plume* that nodded o'er his head. *Dryden.*

3. Pride; towering mein.—

Great Duke of Lancaster, I come to thee
From *plume*-plucked Richard. *Shak. Rich. II.*

4. Token.

4. Token of honour; prize of contest.—

Ambitious to win from me some *plume*. *Milt.*

5. *Plume* is a term used by botanists for that part of the seed of a plant which in its growth becomes the trunk; it is inclosed in two small cavities, formed in the lobes for its reception, and is divided at its loose end into divers pieces, all closely bound together like a bunch of feathers, whence it has this name. *Quincy.*

(2.) *PLUME*, in botany, (§ 1, def. 5.) See *GEMMA*.

(3.) *PLUME*, in geography, a town of France, in the dep. of Lot and Garonne; 7 miles SW. of Agen.

* *TO PLUME*. *v. a.* [from the noun.]. 1. To pick and adjust feathers.—Swans must be kept in some enclosed pond, where they may have room to come ashore and *plume* themselves. *Mort.* 2. [*Plumer*, Fr.] To strip of feathers.—Such animals, as feed upon flesh, devour some part of the feathers of the birds, because they will not take pains fully to *plume* them. *Ray.* 3. To strip; to pill.—The king cared not to *plume* the nobility and people to feather himself. *Bacon.* 4. To place as a *plume*.—

His stature reach'd the sky, and on his crest
Sat horror *plum'd*. *Milton's Par. Lost.*

5. To adorn with *plumes*.—

Farewell the *plumed* troops. *Shak. Othello.*

* *PLUMEALLUM*. *n. f.* [*alumen plumosum*, Lat.] A kind of asbestos.—*Plumeallum*, formed into the likeness of a wick, will administer to the flame, and yet not consume. *Wilkins.*

PLUMELEC, a town of France, in the dep. of Morbihan; $7\frac{1}{2}$ miles SSW. of Joffelin, and 11 NE. of Vannes.

PLUMELIAU, a town of France, in the dep. of the Morbihan; 6 miles S. of Pontivy and 8 NE. of Orient.

PLUMENTAAL, a town of Germany, in Austria; 4 miles W. of Zisterdorf.

PLUMERIA, in botany, *Red Jasmine*, a genus of the monogynia order, belonging to the pentandria class of plants: and in the natural method ranking under the 30th order, *Contorta*.

PLUMIER, Charles, a learned Minim, born at Marseilles, and one of the most able botanists of the 17th century. He was instructed by the famous *MAIGNAN*, who taught him mathematics, turnery, the art of making spectacles, burning-glasses, microscopes, &c. He at length went to Rome, and applied himself entirely to botany under a skilful Italian. At his return to Provence, he settled in the convent at Bornes; a maritime place near Hieres, where he made discoveries in the fields with respect to simples. He was sent by the French king to America, to bring from thence such plants as might be of service in medicine. He made three different voyages to the Antilles, and stopped at the island of St Domingo. The king gave him a pension; and he at last settled at Paris. Preparing to go a 4th time to America, he died at the port of Santa Maria, near Cadix, in 1706. He wrote several excellent works; the chief are, 1. A volume of the Plants in the American Islands. 2. A Treatise on the American Fern. 3. The Art of Turnery; a curious work embellished with plates.

* *PLUMIGEROUS*. *adj.* [*pluma* and *gero*, Lat.] Having feathers; feathered. *DiB.*

* *PLUMIPEDE*. *n. f.* [*pluma* and *pes*, Lat.] A fowl that has feathers on the foot. *DiB.*

(1.) * *PLUMMET*. *n. f.* [from *plumb*.] 1. A weight of lead hung at a string, by which depths are sounded, and perpendicularity is discerned.—

Deeper than did ever *plummet* sound,
I'll drown my book. *Shak. Tempest.*

Fly, envious time,
Call on the lazy leaden-stepping hours,
Whole speed is but the heavy *plummet's* pace. *Milton.*

2. Any weight.—God fees the body of flesh which you bear about you, and the *plummets* which it hangs upon your soul. *Duppa's Rules*.—The heaviness of these bodies must be counterpoised by a *plummet* fastened about the pulley on the axis: this *plummet* will descend according as the sand doth make the several parts of the wheel lighter or heavier. *Wilkins.*

(2.) *PLUMMET*, *PLUMB RULE*, or *PLUMB LINE*, an instrument used by carpenters, masons, &c. in order to judge whether walls, &c. be upright planes, horizontal, or the like. It is thus called from a piece of lead, fastened to the end of a chord, which usually constitutes this instrument. Sometimes the string descends along a wooden ruler, &c. raised perpendicular on another; in which case it becomes a level.

PLUMMING. *n. f.* among miners, is the method of using a mine-dial, in order to know the exact place of the work where to sink down an air-shaft, or to bring an adit to the work, or to know which way the load inclines when any flexure happens in it. It is thus performed. A skilful person with an assistant, and with pen, ink, and paper, and a long line, and a sun-dial, after his guess of the place above ground, descends into the adit or work, and there fastens one end of the line to some fixed thing in it; then the incited needle is let to rest, and the exact point where it rests is marked with a pen; he then goes on farther in the line still fastened, and at the next flexure of the adit he makes a mark on the line by a knot or otherwise: and then letting down the dial again, he there likewise notes down that point at which the needle stands in this second position. In this manner he proceeds, from turning to turning, marking down the points, and marking the line, till he comes to the intended place: this done, he ascends and begins to work on the surface of the earth what he did in the adit; bringing the first knot in the line to such a place where the mark of the place of the needle will again answer its pointing, and continues this till he come to the desired place above ground, which is certain to be perpendicular over that part of the mine into which the air shaft is to be sunk.

PLUMOSE. *adj.* formed in the manner of a feather, with a stem and fibres issuing from it on each side; such are the antennæ of certain moths, butterflies, &c.

* *PLUMOSITY*. *n. f.* [from *plumos*.] The state of having feathers.

* *PLUMOUS*. *adj.* [*plumicus*, Fr. *plumosus*, Lat.] Feathery; resembling feathers.—This has a like *plumous* body in the middle, but finer. *Woodw.*

(1.)

(1.) * **PLUMP**, *adj.* [Of this word the etymology is not known. *Skinner* derives it from *pom-ele*, Fr. full like a ripe apple; it might be more fitly deduced from *plum*, which yet seems very arth. *Junius* omits it.] Somewhat fat; not lean; sleek; full and smooth.—The heifer, that valued self upon a smooth coat and a *plump* habit of body, was taken up for a sacrifice. *L'Estrange*.—

Plump gentleman,

Get out as fast as e'er you can.

The famished crow

Grows *plump* and round, and full of mettle.

(2.) * **PLUMP**, *adv.* [Probably corrupted from *lumb*, or perhaps formed from the sound of a one falling in the water.] With a sudden fall.—Or to some river take 'em

Plump, and see if that would wake 'em.

(3.) * **PLUMP**, *n. f.* [from the adjective.] A nut; a tuft; a cluster; a number joined in one mass. I believe it is now corrupted to *clump*.—England, Scotland, Ireland lie all in a *plump* together, not accessible but by sea. *Bacon*.—Warwick having espied certain *plumps* of Scottish horsemen ranging the field, returned towards the riore to prevent danger. *Hayward*.—We rested under a *plump* of trees. *Sandys*.—

A *plump* of fowl behold their foe on high.

(1.) * **To PLUMP**, *v. a.* [from the adj.] To fatten; to swell; to make large.—The particles of air expanding themselves, *plump* out the sides of the bladder. *Boyle*.—I'm as lean as carrion; but wedding at your house will *plump* me up with good cheer. *L'Estrange*.—Let them lie for the dew and the rain to *plump* them. *Mortimer*.

(2.) * **To PLUMP**, *v. n.* [from the adverb.] To fall like a stone into the water. A word formed from the sound, or rather corrupted from *clumb*. 2. [from the adjective.] To be swollen. *Ansforth*.

* **PLUMPER**, *n. f.* [from *plump*] Something worn in the mouth to swell the cheeks.—

She dext'rously her *plumbers* draws,

That serve to fill her hollow jaws.

* **PLUMPNESS**, *n. f.* [from *plump*] Fulness; disposition towards fulness.—Those convex glasses supply the defect of *plumpness* in the eye. *Newton*.

* **PLUMPORRIDGE**, *n. f.* [*plum* and *porridge*.] Porridge with plums.—A rigid dissenter, who lined at his house on Christmas day, eat very plentifully of his *plumporridge*. *Addison*.

(1.) * **PLUMPUDDING**, *n. f.* [*plum* and *pudding*.] Pudding made with plums.

(2.) **PLUMPUDDING STONE**, in mineralogy. See *CALLANDER*, No 1; and *MINERALOGY*, Part II. Chap. IV. *Clas*s I. *Order* III. *Sec*. II. *Gen*. II.

* **PLUMPY**, *adj.* *Plump*; fat. A ludicrous word.—

Come, thou monarch of the vine,

Plumpy Bacchus, with pink eyne. *Shak*.

PLUMSTEAD, a post town of Pennsylvania, on the W. bank of the Delaware, 36 miles N. of Philadelphia.

PLUMULE, *n. f.* in botany, the diminutive of *plume*; the small bud, germ, or embryo, in grain, from which vegetation commences; called *Acrospire* by makfers. See *ACROSPIRE*, and *PLANT*, § 29.

* **PLUMY**, *adj.* [from *plume*.] Feathered; covered with feathers.—

Satan fell, and straight a fiery globe
Of angels on full sail of wing flew oigh,
Who on their *plumy* vans received him soft
From his uneasy station. *Mikton*.

Appeared his *plumy* crest, besmeared with blood. *Addison*.

—Like a quill, with the *plumy* part only upon one side. *Grew*.

PLUNATIA. See *PIANOSA*.

* **PLUNDER**, *n. f.* [from the verb.] Pillage; spoils gotten in war.—

Let loose the murmuring army on their masters,
To pay themselves with *plunder*. *Orcway*.

* **To PLUNDER**, *v. a.* [*plunderen*, Dutch.] 1. To pillage; to rob in an hostile way.—Nebuchadnezzar *plunders* the temple of God. *South*. 2. To take by pillage.—Being driven away, and his books *plundered*, one of his neighbours bought them in his behalf. *Fell*.—

Ships made in peace a treasure richer far,
Than what is *plunder'd* in the rage of war.

Dryden.

3. To rob as a thief.—

Their country's wealth our mightier misers drain,
Or cross, to *plunder* provinces, the main. *Pope*.

* **PLUNDERER**, *n. f.* [from *plunder*.] 1. Hostile pillager; spoiler. 2. A thief; a robber.—It was a famous saying of William Rufus, who so ever spares perjured men, robbers, *plunderers*, and traitors, deprives all good men of their peace and quietness. *Addison*.—

What one *plunderer* left, the next will seize.

Dryden.

PLUNERET, a town of France, in the dep. of the Morbihan; 2 miles E. of Auray, and 7½ W. of Vannes.

* **PLUNGE**, *n. f.* 1. Act of putting or sinking under water. 2. Difficulty; strait; distress.—She was weary of life, since she was brought to that *plunge*; to conceal her husband's murder, or accuse her son. *Sidney*.—People, when put to a *plunge*, cry out to heaven for help. *L'Estrange*.—

And wilt thou not reach out a friendly arm,
To raise me from amidst this *plunge* of sorrows?

Addison.

—He must be a good man; a quality which Cicero and Quintilian are much at a *plunge* in asserting to the Greek and Roman orators. *Baker*.

(1.) * **To PLUNGE**, *v. a.* [*plonger*, Fr.] 1. To put suddenly under water, or under any thing supposed liquid.—

Plunge us in the flames. *Milton*.
Headlong from hence to *plunge* herself she springs. *Dryden*.

2. To put into any state suddenly.—

I mean to *plunge* the boy in pleasing sleep,
And ravish'd in Idalian bow'rs to keep. *Dryden*.

3. To hurry into any distress.—
O, conscience! into what abyss of fears

Ans

And horrors hast thou driv'n me ? out of which
I find no way ; from deep to deeper *plung'd*.
Milton.

—Without a prudent determination in matters
before us, we shall be *plunged* into perpetual errors. *Watts.* 4. To force in suddenly. This
word, to what action soever it be applied, commonly expresses either violence and suddenness in
the agent, or distress in the patient.—

At this advanc'd, and sudden as the word,
In proud Plexippus' bosom *plung'd* the sword.
Dryden.

—Let them not be too hasty to *plunge* their enquiries
at once into the depths of knowledge. *Watts.*

(2.) * To *PLUNGE*. *v. n.* 1. To sink suddenly
into water ; to dive.—

Accounted as I was, I *plunged* in. *Shak.*

His courier *plung'd*.

And threw him off ; the waves whelm'd over
him. *Dryden.*

Forc'd to *plunge* naked in the raging sea.
Dryden.

—When tortoises have been a long time upon the
water, their shell being dried in the sun, they are
easily taken ; by reason they cannot *plunge* into
the water nimbly enough. *Ray.* 2. To fall or rush
into any hazard or distress.—He could find no
other way to conceal his adultery, but to *plunge*
into the guilt of a murder. *Tilloson.*—

Bid me for honour *plunge* into a war. *Addis.*

He *plung'd* into the gulph which heav'n fore-
told. *Pope.*

* *PLUNGEON*. *n. f.* [*mergus*, Latin.] A sea
bird. *Ainsworth.*

* *PLUNGER*. *n. f.* [from *plunge*.] One that
plunges ; a diver.

* *PLUNKET*. *n. f.* A kind of blue colour.
Ainsworth.

(1.) * *PLURAL*. *adj.* [*pluralis*, Lat.] 1. Im-
plying more than one.—

Better have none

Than *plural* faith, which is too much by one.
Shak.

2. [In Grammar.]—The Greek and Hebrew have
two variations, one to signify the number two,
and another to signify a number of more than two ;
under one variation the noun is said to be of the
dual number, and under the other of the *plural*.
Clarke.

(2.) *PLURAL*. See *GRAMMAR*, under *ENGLISH*
LANGUAGE, p. 692, 694.

* *PLURALIST*. *n. f.* [*pluraliste*, Fr. from *plu-
ral*.] One that holds more ecclesiastical benefices
than one with cure of souls.—If the *pluralists*
would do their best to suppress curates, their
number might be retrenched. *Collier.*

(1.) * *PLURALITY*. *n. f.* [*pluralité*, Fr.] 1. The
state of being or having a greater number.—It is
not *plurality* of parts without majority of parts,
maketh the total greater. *Bacon.* 2. A number
more than one.—Those hereticks had introduced
a *plurality* of gods. *Hammond.*—Sometimes it ad-
mitteth of distinction and *plurality*. *Pearson.*—They
could forego *plurality* of wives. *Bentley.*—'Tis im-
possible to conceive how any language can want
this variation of the noun, where the nature of its
signification is such as to admit of *plurality*. *Clarke.*
3. More cure of souls than one. 4. The greater

number ; the majority.—Take the *plurality* of the
world, and they are neither wise nor good. *L'Ecl.*

(2.) *PLURALITY*, OF BENEFICES, OR LIVINGS.
is where the same clerk is possessed of two or
more spiritual preferments, with cure of souls.
See *BENEFICE*, § 2—8. The smallness of some
benefices first gave rise to pluralities ; for an ec-
clesiastic, unable to subsist on a single one, was
allowed to hold two ; and at length the number
increased without bounds. A remedy was at-
tempted for this abuse at the council of Lateran
under Alexander III. and Innocent III. in 1215,
when the holding more than one benefice was
forbid by a canon under the penalty of depriva-
tion ; but the same canon granting the pope a
power to dispense with it in favour of persons of
distinguished merit, the prohibition became al-
most useless. They were also restrained by stat.
21 Hen. VIII. cap. 13. which enacts, that if any
person having one benefice with cure of souls, of
the yearly value of 8l. or above (in the king's
books), accept any other with cure of souls, the
first shall be adjudged in law to be void, &c.
though the same statute provides for dispensation
in certain cases. In England, to procure a dis-
pensation, the presentee must obtain of the bishop,
in whose diocese the livings are, two certificates
of the values in the king's books, and the repu-
ted values and distance ; one for the archbishop,
and the other for the lord chancellor. And if the
livings lie in two dioceses, then two certificates
of the same kind are to be obtained from each
bishop. He must also show the archbishop his
presentation to the 2d living ; and bring with him
two testimonials from the neighbouring clergy
concerning his behaviour and conversation, one
for the archbishop and the other for the lord
chancellor ; and he must also show the arch-
bishop his letters of orders, and a certificate of his
having taken the degree of M. A. at the least, in
one of the universities of this realm, under the
hand of the regifter. And if he be not B. D. nor
D. D. nor LL. B. nor LL. D. he is to procure a
qualification of a chaplain, which is to be duly
registered in the faculty of office, in order to be
tendered to the archbishop, according to the sta-
tute. And if he hath taken any of the aforesaid
degrees, which the statute allows as qualifications,
he is to procure a certificate thereof, and to show
the same to the archbishop ; after which his dis-
pensation is made out at the faculty office, where
he gives security according to the direction of the
canon. He must then repair to the lord chan-
cellor for confirmation under the broad seal ; and he
must apply to the bishop of the diocese where the
living lies for his admission and institution. By
the several stamp acts, for every skin, or paper,
or parchment, &c. on which any dispensation to
hold two ecclesiastical dignities or benefices, or a
dignity and a benefice, shall be engrossed or writ-
ten, there shall be paid a treble 40s. stamp duty.
There is also a regulation with regard to plurali-
ties ; but it is often dispensed with : for, by the
faculty of dispensation, a pluralist is required, in
that benefice from which he shall happen to be
most absent, to preach 13 sermons every year,
and to exercise hospitality for two months yearly.
In Germany the pope grants dispensations for poi-
sening.

ing a plurality of benefices, on pretence that the ecclesiastical princes there need large revenues to bear up against the Protestant princes.

(3.) **PLURALITY OF WORLDS.** See **ASTRONOMY**, § 170, 203—205; and **PLANET**, § 2.

* **PLURALLY.** *adv.* [*plural.*] In a sense implying more than one.

PLUS. [Latin, *more.*] in algebra, a character marked thus +, used for the sign of addition. See **ALGEBRA**, Part I. *def.* 2. and **NEGATIVE**, § 2.

(4.) * **PLUSH.** *n. f.* [*peluche*, French.] A kind of villous or shaggy cloth; shag; a kind of wool-n. velvet.—The bottom of it was set against a lining of plush. *Bacon.*—The colour of plush or velvet will appear varied, if you stroak part of it one way, and part of it another. *Boyle.*—

I love to wear cloths that are plush,

Not prefacing old rags with plush. *Cicavell.*

(2.) **PLUSH**, in commerce, &c. has a sort of velvet knap or shag on one side, composed regularly of a wool of a single woollen thread and a double warp; the one wool, of two threads twisted; the other goats or camels hair; though there are some plushes entirely of worsted, and others composed wholly of hair.

* **PLUSHER.** *n. f.* [*galea levis*.] A sea fish.—The picchard is devoured by a bigger kind of fish called a *plusher*, somewhat like the dog-fish. *Varro.*

PLUTARCH, a great philosopher and historian of antiquity, who lived from the reign of Claudius to that of Hadrian, was born at Chæronea, a small city of Bœotia in Greece. Plutarch's family was ancient in Chæronea: his grandfather Lamprias was a philosopher, and eminent for his learning; and is often mentioned by Plutarch in his writings, as is also his father. Plutarch was initiated early in study, and was placed under the care of Ammonius, an Egyptian; who, after having taught philosophy with great reputation at Alexandria, settled at Athens. Under this master he made great advances in knowledge; but like a true philosopher, more apt to regard things than words, he neglected the study of languages. Though he is supposed to have resided in Rome near 40 years, at different times, yet he never seems to have acquired a competent skill in the Latin language; nor did he even cultivate his mother-tongue, the Greek, with accuracy, and hence that harshness, inequality, and obscurity in his style, which is so justly complained of. After being grounded by Ammonius, he travelled into Egypt, and was initiated in the Egyptian Mysteries, as appears by his treatise *Of Isis and Osiris*; in which he shows himself well versed in their ancient theology and philosophy. From Egypt he returned into Greece; and visiting in his way all the academies and schools of the philosophers, gathered from them many of those observations with which he has enriched his works. He does not seem to have been attached to any particular sect, but culled from each whatever he thought excellent. He could not bear the paradoxes of the Stoics, but was still more averse from the impiety of the Epicureans; in many things he followed Aristotle; but his favourites were Socrates

and Plato, whose memory he revered so highly, that he annually celebrated their birth-days with much solemnity. Besides this, he applied himself with extreme diligence to collect, not only all books, but also all the sayings and observations of wise men, which he had heard in conversation, or had received from others by tradition; and likewise to consult the records and public instruments preserved in cities which he had visited in his travels. He took a particular journey to Sparta, to search the archives of that famous kingdom, to understand their ancient government, with the history of their legislators, kings, and ephori. He took the same methods with regard to many other commonwealths; and thus was enabled to leave us in his works such a rich cabinet of observation upon men and manners, as, in the opinion of Montaigne and Bayle, have rendered him the most valuable author of antiquity. Few circumstances of Plutarch's life are known. According to the learned Fabricius, he was born under Claudius, 50 years after the Christian era. He was married to a most amiable woman of his own native town, whose name was Timoxena, and to whose sense and virtue he bears the most affectionate testimony in his moral works. He had several children, and among them two sons; one called *Plutarch* after himself, the other *Lamprias* in memory of his grandfather. Lamprias seems to have inherited his father's philosophy; and to him we owe the table or catalogue of Plutarch's writings, and perhaps also his apophthegms. He had a nephew, Sextus Chæroneus, who taught the learned emperor Marcus Aurelius the Greek tongue, and was much honoured by him. Some think, that the critic Longinus was of his family; and Apuleius, in the first book of his *Metamorphoses*, affirms himself to be descended from him. Plutarch, upon going to Rome, had a great resort of the Roman nobility: for he tells us himself, that he was so taken up in giving lectures on philosophy to the great men of Rome, that he had not time to make himself master of the Latin tongue. He was several times at Rome, and contracted an intimacy with Sossius Senecio, a worthy man, who had been four times consul, and to whom Plutarch has dedicated many of his lives. But his chief object in these journeys, was to search the records of the Capitol, and the public libraries. Suidas says he was intrusted also with the management of public affairs in the empire, during his residence in the metropolis. "Plutarch (says he) lived in the time of Trajan, who bestowed on him the consular ornaments, and caused an edict to be passed, that the magistrates or officers of Illyria should do nothing in that province without his knowledge and approbation." It is generally supposed that Trajan, a private man when Plutarch first came to Rome, was, among other nobility, one of his auditors; that this wise emperor afterwards made use of him in his councils. Much indeed of the happiness of his reign has been imputed to Plutarch. Fabricius asserts that he was Trajan's preceptor, and that he was raised to the consular dignity by him, and made procurator of Greece in his old age by Adrian. The desire of visiting his native country prevailed with him at

length to leave Italy; and at his return he was unanimously chosen archon of Chæroneæ, and soon after admitted into the number of the Delphic Apollo's priests. Fabricius says he died in the 5th year of Adrian, aged 70. His works have been divided into *Lives* and *Morals*. He has been justly esteemed for his fine sense and learning, for his integrity, and for a certain air of goodness which appears in all his works. His aim was to instruct and charm the mind; and in this none ever went beyond him. Of his moral writings it is to be regretted that we have no elegant English translation. Even his *Lives* were chiefly known to the English reader by a miserable version, till a new one executed with fidelity and spirit was presented to the public by the Langhorns in 1770.

PLUTIA, an ancient town of Sicily. *Cic.*

PLUTO, in Pagan worship, the king of the infernal regions, was the son of Saturn and Ops, and the brother of Jupiter and Neptune. This deity, finding himself childless and unmarried, mounted his chariot to visit the world; and arriving in Sicily, fell in love with Proserpine, whom he saw gathering flowers with her companions in the valley of Enna, near mount Ætna; when, forcing her into his chariot, he drove her to the river Chemarus, through which he opened himself a passage back to the realms of night. See CERES and PROSERPINE. Pluto is usually represented in an ebony chariot drawn by four black horses; sometimes holding a sceptre, to denote his power; at others a wand, with which he drives away the ghosts; and at others, some keys, to signify that he had the keys of death. Homer observes, that his helmet had the quality of rendering the wearer invisible, and that Minerva borrowed it in order to be concealed from Mars when she fought against the Trojans. Pluto was greatly revered both by the Greeks and Romans, who erected temples and altars to him. To this god sacrifices were offered in the night, and it was not lawful to offer them by day.

PLUTUS, in Pagan worship, the god of riches. He was represented as appearing lame when he approached, and with wings at his departure; to show the difficulty of amassing wealth, and the uncertainty of its enjoyment. He was also frequently represented blind, to show that he often bestowed his favours on the most unworthy, and left in necessity those who had the greatest merit.

(1.) * PLUVIAL. PLUVIOUS. *adj.* [from *pluvia*, Latin.] Rainy; relating to rain.—The fungous parcels about the wicks of candles only signify a moist and *pluvial* air about them. *Brown.*

(2.) * PLUVIAL. *n. f.* [*pluvial*, Fr.] A priest's cope. *Dinworth.*

PLUVIALIS. See CHARADRIUS, N° 9.

(1.) PLUVIERS, a town of France, in the department of Eure and Loire, and ci-devant province of Beauce, 20 miles N. of Orleans. Lon. 21° E. Lat. 48° 14' N.

(1.) PLUVIERS. See PITHIERS.

PLUVIGNER, a town of France, in the department of Morbihan; 6 miles N. of Auray, and 3½ E. of Orient.

PLUVIOSE. [Fr. *i. e.* Rainy,] the 5th month of the year, and the 4th month of winter, in the

new French Calendar; commencing January and ending February 18. See CALENDAR, § 3.

* PLUVIOUS. See PLUVIAL, § 1.

PLUVIUS, a surname of Jupiter. He was invoked by that name among the Romans when the earth was parched up by continued heat, and want of rain. He had an altar in the temple of the capitol.

* PLY. *n. f.* [from the verb.] 1. Bent; turned; form; cast; bias.—The late learners cannot well take the *ply*. *Bacon.* 2. Plait; fold.—The rugæ or *plies* of the inward coat of the stomach detain the aliment in the stomach. *Arbuthnot.*

(1.) * To PLY. *v. a.* [*plian*, to work at a thing, old Dutch. *Turinus and Skinner.*] 1. To work on any thing closely and importunately.

The wound's great author close at hand provokes

His rage, and *plies* him with redoubled stroke *Dryden*

—The hero from afar

Plies him with darts and stones. *Dryden*

2. To employ with diligence; to keep busy; to set on work.—

Her gentle wit she *plies*

To teach them truth. *Spenser*

—He refused his pen too, and *plied* it as hard *Fell.*

They their legs *plied*. *Hudibras*

—He who *plies* all means and opportunities in search of truth, may rest upon the judgment of his conscience to inform, as a warrantable guide *South.*

The weary Trojans *ply* their shattered oars To nearest land. *Dryden*

—I have *plied* my needle these fifty years. *Spenser*

3. To practise diligently.—

He sternly bade him other business *ply*. *Spenser*

Keep house, and *ply* his book.

Then commune how they best may *ply* Their growing work. *Milton*

Their bloody talk unwearied still they *ply*. *Wallers*

4. To solicit importunately.—

He *plies* her hard, and much rain wears the marble. *South.*

He *plies* the duke at morning and at night. *South.*

—Whoever has any thing of David's piety will be perpetually *plying* the throne of grace with such like acknowledgments. *South.*

(2.) * To PLY. *v. n.* 1. To work, or offer service.—He was forced to *ply* in the streets as a porter. *Spenser.* 2. To go in haste.—

Thither he *plies* undaunted. *Milton*

3. To busy one's self.—

A bird new made, about the banks she *plies*. *Dryden*

4. [*Plier*, Fr.] To bend.—The willow *plied* and gave way to the gust. *L'Estrange.*

(1.) * PLYERS. *n. f.* See PLIERS.

(2.) PLYERS, in fortification, a kind of balance used in raising or letting down a draw-bridge. They consist of two timber levers, twice as long as the bridge they lift, joined together by other timbers formed together in the form of a St. Andrew's cross to counterpoise them. They are supported by two upright jambs, on which they swing; and the bridge is raised or let down by

eans of chains joining the ends of the plyers and bridge.

PLYING, *part. n. f.* in the sea-language, the act of making, or endeavouring to make, a pro-
cess against the direction of the wind. Hence a
ship that advances well in her course in this
manner of sailing, is said to be a good plyer.
See **BEATING**, **PITCHING**, and **TACKLING**.

PLYM, a river of England, which rises in De-
vonsire; becomes a navigable river at Plymouth,
and falls into Plymouth Sound, a little below
Plymouth.

(1.) **PLYMOUTH**, a town of Devonshire, about
15 miles from London, between the rivers Plym
and Tamar, just before they fall into the British
channel. From a mere fishing village, it has
become one of the largest towns in the county;
and is one of the chief magazines in the kingdom,
in account of its port, which is one of the safest
in England, and which is so large as to be able
to contain 1000 sail. It is defended by several
different forts, mounting nearly 300 guns; of
which the chief is the Royal Citadel, erected in
the reign of Charles II. opposite to St Nicholas
Island, which is within the circuit of its walls,
and contains a large store-house and five regular
barracks. In time of war, the outward bound
convoys generally rendezvous at Plymouth, and
inward bound ships generally put in to
provide pilots up the Channel. It is also a great
place of resort for men of war that are wind-
bound. The mouth of the Tamar is called *Ham-
Dose* (see *HAMOAZE*), and that of the Plym, *CAT-
WATER*, which are both commanded by the
castle on St Nicholas Island. About two miles
up the mouth of the Tamar, there are four docks,
two of which were built in the reign of William
III. one wet, and the other dry, and two which
have been built since. They have every conve-
nience for building or repairing ships, and one of
them is hewn out of a mine of slate, and lined
with Portland stone. This town has a considerable
FISHERY, and carries on an extensive
trade with Newfoundland and the Straits. There
is a customhouse in it; and though there are two
churches, besides several meeting-houses, yet each
church has so large a cure of souls, that the parish
clerks were till very lately in deacon's orders, to
enable them to perform all the offices. The
seat-rents are given to the poor. The lectures
are chosen triennially by the corporation, which
was constituted by Henry VI. and consist of
a mayor, 12 aldermen, and 24 common councilmen.
The mayor is elected by a jury of 36 persons,
chosen by four others, two of whom are appointed
by the mayor and aldermen, and the other two
by the common council. There is also a recorder,
and a town clerk, whose place is very profitable.
The town consists of four divisions, which were
anciently governed by four captains, each of
whom had three constables under him. It is well
supplied with fresh water, which was brought
from the distance of seven miles, by Sir Francis
Drake, a native of the town. The toll of the
markets, and of the cotton, yarn, &c. with the
profit of the mill, which is very considerable,
belongs to the corporation, as do the revenues of
the shambles, which are farmed out for the

mayor's kitchen. There is a charity-school in
Plymouth, four hospitals, and a workhouse, in all
which 100 poor children are clothed, fed, and taught;
and there are two printing houses. To one of the
hospitals Colonel Jory gave a charity for 12 poor
widows, and a mace worth 120*l.* to be carried
before the mayor, and six good bells, valued
500*l.* to Charles Church. In the entrance of the
bay lies the famous Eddystone rock. (See *ED-
DYSTONE ROCKS*.) In the reign of Edward III.
the French landed, and burnt part of the town,
but were soon repulsed by Hugh Courtenay, earl
of Devon. In the reign of Henry IV. the French
landed again, and burnt 600 houses. Between
this town and the sea is a hill called the Haw,
which has a delightful plain on the top, having a
pleasant prospect all round it, and a good land-
mark for the use of mariners. The list of parlia-
ment men for this borough, formerly divided into
two parts, by the names of Sutton-Valtort and
Sutton-Prior, commenced the 26th of Edward I.
and continued to the 14th of Edward III. after
which we find no return made for it till the 20th
of Henry VI. when the privilege was renewed.
On the Haw is a fort, which at once awes the
town, and defends the harbour. Here is a ferry
over the Tamar, called Cromwell, or Crimble
Passage, the W. side of which is called Westone
House, and is in Devonshire, though most of the
parish wherein it stands is in Cornwall. In April
1759, the parliament granted 25,159*l.* for the
better fortifying the town and dock of Plymouth;
which was visited by George III. with the Queen,
&c. in August 1789. Lon. 4. 15. W. Lat. 50.
26. N.

(2.) **PLYMOUTH**, a maritime county of Massa-
chusetts, bounded on the N. by Norfolk, E. by
Cape Cod Bay, SE. by Barnstable county, S. by
Buzzard's Bay, and SW. and W. by Bristol. It is 37
miles long, 21 broad, and contained 4240 houses,
and 29,535 citizens, in 1795. It is divided into
15 townships, and abounds with iron ore, which
has given rise to numerous manufactures. In this
and the adjoining county of Bristol, there are 20
furnaces, 20 forges, 7 sitting and rolling mills;
besides an incredible number of shops for the
manufacture of nails and other articles in smithery.
These produce annually about 1800 tons of iron
wares; as spades, shovels, saws, scythes, cannon-
balls, fire-arms, bells, cards, nails, &c.

(3.) **PLYMOUTH**, a sea port town, and capital
of the above county. It is remarkable for having
been the first settlement in New England, and for
having had the first place of worship. It is seated
at the south end of Plymouth Bay. Its exports
in 1794 amounted to 353,361 dollars. Lon. 70. 10.
W. Lat. 41. 58. N.

(4.) **PLYMOUTH**, a town of Connecticut, in
Litchfield county.

(5.) **PLYMOUTH**, a post town of New Hamp-
shire, in Grafton county, on the W. bank of the
Pemigewasset, at the mouth of Baker's river, 45
miles N. of Concord. It has a court-house and
congregational church, and contained 625 citizens
in 1795. It is 71 miles NW. of Portsmouth, and
463 of Philadelphia. Lon. 2. 28. E. of that city.
Lat. 43. 46. N.

(6.) **PLYMOUTH**, a post town of N. Carolina,
S 65 E 2 ON

on the S. bank of the Roanoke, 5 miles above its mouth; 23 miles S. by W. of Edenton, and 463 SW. of Philadelphia. Lon. 1. 58. W. of that city. Lat. 35. 51. N.

(7.) **PLYMOUTH**, a town of New York, on the W. bank of the Seneca, on a gentle declivity, 12 miles SE. of Geneva.

(8, 9.) **PLYMOUTH**, two townships of Pennsylvania; the one in Luzerne, and the other in Montgomery counties.

(10.) **PLYMOUTH**, a town of Hispaniola, near Jeremie.

(11.) **PLYMOUTH**, a town of Tobago.

(12.) **PLYMOUTH BAY**, a bay of Massachusetts, on the coast of Plymouth county, 41 miles SE. of Boston.

(13.) **PLYMOUTH SOUND**, a sound on the coast of Devonshire, below Plymouth.

PLYMPTON, a township of Massachusetts, in Plymouth county, 45 miles SE. of Boston; containing 956 citizens in 1795.

PLYMTREE, a town of Devonshire, E. of Bradninch.

PLYNLIMMON. See **PLIMLINMON**, and **SNOWDON**.

PLYNTERIA, a Grecian festival in honour of Aglauros, or rather of Minerva, who received from the daughter of Cecrops the name of Aglauros. The word is derived from *πλύνω*, *lavare*, because during the solemnity they undressed the statue of of the goddess, and washed it. The day on which

it was observed was looked upon as unfortunate and inauspicious; and therefore no person was permitted to appear in the temples, as they were purposely surrounded with ropes. The arrival of Alcibiades in Athens that day, was thought very unfortunate; but the success that ever after attended him proved it to be otherwise. It was customary at this festival to bear in procession a cluster of figs; which intimated, the progress of civilization among the first inhabitants of the earth, as figs served them for food after they had begun to dislike acorns.

* **PNEUMATICAL**. } *adj.* [*πνευματικός*, from

* **PNEUMATICK**. } *πνεύμα*.] 1. Moved by wind; relative to wind.—I fell upon the making of *pneumatical* trials. *Boyle*.—That the air near the surface of the earth will expand itself, when the pressure of the incumbent atmosphere is taken off, may be seen in the experiments made by Boyle in his *pneumatic* engine. *Locke*.—

They with *pneumatic* engine ceaseless draw.

Philips.

2. Consisting of spirit or wind.—All solid bodies consist of parts *pneumatical* and tangible; the *pneumatical* substance being in some bodies the native spirit of the body, and in others plain air that is gotten in. *Bacon*.—The race of all things here is, to extenuate and turn things to be more *pneumatical* and rare; and not to retrograde from *pneumatical* to that which is dense. *Bacon*.

P N E U M A T I C S.

DEFINITIONS OF THE SCIENCE.

PNEUMATICKS is thus defined and illustrated by Dr Johnson:

* **PNEUMATICKS**. *n. f.* [*pneumatique*, Fr. *πνεύμα*.]

1. A branch of mechanics, which considers the doctrine of the air, or laws according to which that fluid is condensed, rarified, or gravitates. *Harris*. 2. In the schools, the doctrine of spiritual substances, as God, angels, and the souls of men. *DiD*.

The word **PNEUMATICS**, in its original meaning, expresses a quality of air, or more properly of breath; but is usually extended to the study of the mechanical properties of all elastic or sensibly compressible fluids; as the term **HYDROSTATICS** is applied to the study of the mechanical properties of such bodies as interest us by their fluidity or liquidity only.

The 2d definition, given above by Dr JOHNSON, is rather restricted to the science of the intellectual phenomena, and is otherwise expressed by the term, **PNEUMATOLOGY**.

The investigation of the nature, principles, and properties of **AIR**, is therefore the chief object of this science; and the practical application of the same to the invention and improvement of various engines for philosophical experiments, its principal use.

SECT. I. Of the PROPERTIES of Air.

The properties of **AIR**, that immense fluid,

upon which not only all animal and vegetable life, but the principal phenomena of nature depend, have of late very much occupied the attention of philosophers. And their success has been proportionate to their industry and exertions. Numberless properties and phenomena have been discovered in this fluid, of the existence of which the ancients had not the most distant conception.

These properties may in general be divided into two great classes, *Chemical* and *Mechanical*. Of these the former are largely treated of under the sciences of **AEROLOGY**, **CHEMISTRY**, and **METEOROLOGY**; as well as under the detached articles, **AIR**, **ATMOSPHERE**, **EVAPORATION**, **FIXED AIR**, **FLUIDITY**, **GAS**, **HYDROGENE**, **NITROGENE**, **OXYGEN**, **WIND**, &c. &c. The latter, the mechanical properties of **Air**, belong properly, though not exclusively, to the science of **PNEUMATICS**.

Of all the mechanical properties of air, the most striking are its *Elasticity* and *Compressibility*. See **ELASTIC**, § 5; and **ELASTICITY**, § 2, 4. Many other bodies have some degree of these properties, but in air they are *essential characteristics*. Water, oil, mercury, and other fluids, are compressible, but the degrees of compressibility they possess are not their distinguishing character. In air it is otherwise; for in this fluid elasticity and compressibility appear in their most simple form, unaccompanied with any other mechanical affection of matter whatsoever, except gravity.

Of all the sensibly compressible fluids, therefore, air is the most familiar, was the first studied, and the most minutely examined. It has accordingly been generally taken as the example of their mechanical properties, while those mechanical properties which are peculiar to any of them, and therefore characteristic, have usually been treated as an appendix to the general science of pneumatics.

By *mechanical properties*, we mean such as produce, or are connected with, sensible changes of motion, and which indicate the presence and agency of moving or mechanical powers. They are therefore the subject of mathematical discussion; admitting of measure, number, and direction, notions purely mathematical.

In common language, a vessel is said to be *empty* when the water, or other fluid which it contained, is poured out of it. Take a cylindrical glass jar, having a small hole in its bottom; and having stopped this hole, fill the jar with water, and then pour out the water, leaving the glass *empty*, in the common acceptance of the word. Now, throw a bit of cork, or any light body, on the surface of water in a cistern: cover this with the glass jar held in the hand with its bottom upwards, and move it downwards, keeping it all the while in an upright position. The cork will continue to float on the surface of the water in the inside of the glass, and will most distinctly show whereabouts that surface is. It will thus be seen, that the water within the glass has its surface considerably lower than that of the surrounding water; and however deep we immerge the glass, we shall find that the water will never rise in the inside of it so as to fill it. If plunged to the depth of 32 feet, the water will only half fill it; and yet the acknowledged laws of hydrostatics tell us, that the water would fill the glass if there were nothing to hinder it. There is therefore something already within the glass which prevents the water from getting into it; manifesting in this manner the most distinctive property of matter, viz. the hindering other matter from occupying the same place at the same time.

In this situation of matters, pull the stopper out of the hole in the bottom of the jar, and the water will instantly rise in the inside of the jar, and stand at an equal height within and without. This is justly ascribed to the escape through the hole of the matter which formerly obstructed the entry of the water: for if the hand be held before the hole, a puff will be distinctly felt, or a feather held there will be blown aside; indicating in this manner that what prevented the entry of the water, and now escapes, possesses another characteristic property of matter, *impulsive force*. The materiality is concluded from this appearance, in the same manner that the materiality of water is concluded from the impulse of a jet from a pipe. We also see the mobility of the formerly pent up, and now liberated, substance, in consequence of external pressure, viz. the pressure of the surrounding water.

If we take a smooth cylindrical tube, shut at one end, and fit a plug to its open end, so as to slide along it, but so tightly as to prevent all passage by its sides; and if the plug be well soaked

in grease, we shall find that no force whatever can push it to the bottom of the tube. There is therefore *something* within the tube preventing by its *impenetrability* the entry of the plug, and therefore possessing this characteristic of matter. In like manner, if, after having opened a pair of common bellows, we shut up the nozzle and valve hole, and try to bring the boards together, we find it impossible. There is something included which prevents this, in the same manner as if the bellows were filled with wool: but on opening the nozzle, we can easily shut them, viz. by expelling this something; and if the compression is forcible, the something will issue with considerable force, and very sensibly impel any thing in its way.

People are apt to think, that we move about without *any* obstruction; but if we endeavour to move a large fan with rapidity, a very sensible hindrance is perceived, and that a very sensible force must be exerted; and a sensible wind is produced, which will agitate the neighbouring bodies. It is therefore justly concluded that the motion is possible only in consequence of having driven this obstructing substance out of the way; and that this impenetrable, resisting, moveable, impelling substance, is *matter*. We perceive the perseverance of this matter in its state of rest when we wave a fan, in the same manner that we perceive the *inertia* of water when we move a paddle through it. The effects of wind in impelling our ships and mills, in tearing up trees, and overturning buildings, are equal indications of its perseverance in a state of motion.

This matter, when at rest, we call *AIR*; and when in motion, *WIND*. Air, therefore, is a *material* fluid; a fluid, because its parts are easily moved, and yield to the smallest inequality of pressure.

Air possesses several other of the very general, though not essential properties of matter. It is heavy. This might be proved, 1. from the gravity of the surrounding *ATMOSPHERE*, which constantly accompanies our globe in its circuit around the sun: 2. from its power in supporting the clouds and vapours, which constantly float in it: 3. From various familiar experiments; such as the following: If we stop the end of a syringe after its piston has been pressed down to the bottom, and then attempt to draw up the piston, we shall find a considerable force necessary, viz. about 15 or 16 pounds for every square inch of the section of the syringe. Exerting this force, we can draw up the piston to the top, and we can hold it there; but the moment we cease acting, the piston rushes down and strikes the bottom. It is called a *suction*, as we feel something as it were drawing in the piston; but it is really the weight of the incumbent air pressing it in. And this obtains in every position of the syringe; because the air is a fluid, and presses in every direction. Nay, it presses on the syringe as well as on the piston; and if the piston be hung by its ring on a nail, the syringe requires force to draw it down, (just as much as to draw the piston up); and if it be let go, it will spring up, unless loaded with at least 15 lb. for every square inch of its transverse section.

4. But

4. But the most direct proof of the weight of the air is had by weighing a vessel empty of air, and then weighing it again when the air has been admitted; and this, as it is the most obvious consequence of its weight, has been asserted as long ago as the days of Aristotle. (See his work, *μετ. superior*, iv. 4.) As a proof, take a round vessel A (fig. 1. Plate CCLXXVIII.) fitted with a stop-cock B, and syringe C. Fill the whole with water, and press the piston to the bottom of the syringe. Then keeping the cock open, and holding the vessel upright, with the syringe underneath, draw down the piston. The water will follow it by its weight, and leave part of the vessel empty. Now shut the cock, and again push up the piston to the bottom of the syringe; the water escapes through the piston valve, as will be explained afterwards: then opening the cock, and again drawing down the piston, more water will come out of the vessel. Repeat this operation till all the water have come out. Shut the cock, unscrew the syringe, and weigh the vessel very accurately. Now open the cock, and admit the air, and weigh the vessel again, it will be found heavier than before, and this additional weight is the weight of the air which fills it; and it will be found to be 523 grains, about an ounce and a fifth avoirdupoise for every cubic foot that the vessel contains. Now, since a cubic foot of water would weigh 1000 ounces, this experiment would show that water is about 840 times heavier than air. The most accurate judgment of this kind of which we have met with an account is that recorded by Sir George Shuckburgh, in the 67th vol. of the *Philos. Trans.* p. 560. From this it follows, that when the air is of the temperature 53, and the barometer stands at 29½ inches, the air is 836 times lighter than water. But the experiment is not susceptible of sufficient accuracy for determining the exact weight of a cubic foot of air. Its weight is very small: and the vessel must be strong and heavy, so as to overload any balance that is sufficiently nice for the experiment.

To prevent this the whole may be weighed in water, first loading the vessel so as to make it preponderate an ounce or two in the water; by which means the balance will be loaded only with this small preponderancy. But even in this case there are considerable sources of error, arising from changes in the specific gravity of the water and other causes. The experiment has often been repeated with this view, and the air has been found at a medium to be about 840 times as light as water, but with great variations, as may be expected from its very heterogeneous nature.

Such is the result of the experiment suggested by Aristotle, evidently proving the weight of the air; and yet the Peripatetics, who professed to follow his *dislates*, uniformly refused it this property. It was a matter long debated among the philosophers of the 17th century. The reason was, that Aristotle, with that indistinctness and inconsistency perceptible in all his writings which relate to matters of fact and experience, assigns a different cause to many phenomena which any man would ascribe to the weight of the air. Of

this kind is the rise of water in pumps and syphons, which all the Peripatetics had for ages ascribed to something which they called *nature's abhorrence of a void*. Aristotle had asserted, that all nature was full of being, and that nature abhorred a void. He adduces many facts, in which it appears, that if not impossible, it is very difficult, and requires great force, to produce a space void of matter. When the operation of pumps and syphons came to be known, the philosophers of Europe (who had all embraced the Peripatetic doctrines) found in this *fancied horror of a fancied mind*, a ready solution of the phenomena; and under this prejudice were satisfied with very superficial reasoning on the subject.

GALILEO was the first who ascribed this to the weight of the air. Many before him had supposed air heavy; and thus explained the difficulty of raising the board of bellows, or the piston of a syringe, &c. But he distinctly applies to this allowed weight of the air all the consequences of hydrostatical laws; for these reasons: The heavy air rests on the water in the cistern, and presses it with its weight. It does the same with the water in the pipe, and therefore both are on a level; but if the piston, after being in contact with the surface of the water, be drawn up, there is no longer any pressure on the surface of the water within the pipe; for the air now rests on the piston only, and thus occasions a difficulty in drawing it up. The water in the pipe, therefore, is in the same situation as if more water were poured into the cistern, that is, as much as would exert the same pressure on its surface as the air does. In this case the water will be pressed into the pipe, and will raise up the water already in it, and follow it till it is equally high within and without. The same pressure of the air shuts the valve E during the descent of the piston. (See *Gal. Discourses*.)

He paid due attention to the very obvious objection, that if the rise of the water was the effect of the air's pressure, it would also be its measure, and would be raised and supported only to a certain height. He directly said so, and adduced this as a decisive experiment. If the horror of a void be the cause, says he, the water must rise to any height however great; but if it be owing to the pressure of the air, it will only rise till the weight of the water in the pipe is in equilibrio with the pressure of the air, according to the common laws of hydrostatics. And he adds, it is a fact, that pumps will not draw water much above 40 palms, although they may be made to *propel* it, or to *lift* it to any height.

In proof of this, an experiment was made in 1642, after Galileo's death, by his zealous and learned disciple TORRICELLI. He filled a glass tube, close at one end, with mercury; judging, that if the support of the water was owing to the pressure of the air, and was the measure of this pressure, mercury would in like manner be supported by it, and this at a height which was also the measure of the air's pressure, and therefore 13 times less than water. He had the pleasure of seeing his expectation verified in the completest manner. His experiment was often repeated, and soon became famous, exciting great controversies among

among the philosophers about the possibility of a vacuum.

This was the era of philosophical ardour; to which Galileo's invention and application of the telescope gave uncommon vigour. Discoveries of the most wonderful kind in the heavens, and which required no extent of previous knowledge to understand them, were thus put into the hands of every person who could purchase a spy-glass; while the high degree of credibility which some of the discoveries, such as the phases of Venus and the rotation and satellites of Jupiter, gave to the Copernican system, immediately set the whole body of the learned in motion. Galileo joined to his ardour a great extent of learning, particularly of mathematical knowledge and sound logic, and was even the first who formerly united mathematics with physics; his treatise on accelerated motion was the first fruit of this union. About 1642 and 1644, many gentlemen associated in Oxford and London for the cultivation of knowledge by experiment; and before 1655, all the doctrines of hydrostatics and pneumatics were familiar. Mr Boyle procured a coalition and correspondence of these clubs under the name of the *Invisible and Philosophical Society*. In May 1658, Mr Hooke finished for Mr Boyle an air-pump, which had employed him a long time. He speaks of this as a great improvement on Mr Boyle's own pump, which he had been using some time before. Boyle therefore must have invented his air-pump, and was not indebted for it to Schottus's account of Otto Guericke's, published in his (*Schottus's*) *Mechanica Hydraulico-pneumatica*, in 1657, as he asserts. (*Techna Curiosa*.) The Royal Society of London arose in 1666 from the coalition of these clubs, after 15 years co-operation and correspondence. The Montmorine Society at Paris had subsisted about the same time; for Paschal in 1648 speaks of the meetings in the Sorbonne College, from which that society originated.—Nuremberg, in Germany, was also a distinguished seminary of experimental philosophy. In Italy, indeed, there had long existed institutions of this kind. Rome was the centre of church government, and the resort of all expectants for preferment. The clergy were the majority of the learned in all Christian nations, and particularly of the systematic philosophers. Thus the experiments of Galileo and Torricelli were rapidly diffused by persons of rank, the dignitaries of the church, and by the monks.

GALILEO was in fact the author of the experiment when he proposed it to be made. Valerianus Magnus owns himself indebted to him for the principle and the contrivance of it. It is neither wonderful that many ingenious men, of one opinion, and instructed by Galileo, should separately hit on so obvious a thing; nor that Torricelli, his immediate disciple, his enthusiastic admirer, and who was in the habits of corresponding with him till his death in 1642, should be the first to put it in practice. All now agree in giving Torricelli the honour of the *first* invention; and it universally passes by the name of the TORRICELLIAN EXPERIMENT. The tube is called the TORRICELLIAN TUBE; and the space left by the mercury is called the TORRICELLIAN VACUUM,

to distinguish it from the BOYLEAN VACUUM, which is only an extreme rarefaction. The experiment was repeated in various forms, and with apparatus which enabled philosophers to examine several effects which the vacuum produced on bodies exposed in it. This was done by making the upper part of the tube terminate in a vessel of some capacity, or communicate with such a vessel, in which were included along with the mercury bodies on which the experiments were to be made. When the mercury had run out, the phenomena of these bodies were carefully observed.

An objection was made to the conclusion drawn from Torricelli's experiments, which appears formidable. If the Torricellian tube be suspended on the arm of a balance, it is found that the counterpoise must be equal to the weight both of the tube and of the mercury it contains. This could not be, say the objectors, if the mercury were supported by the air. It is evidently supported by the balance; and this gave rise to another notion of the cause different from the peripatetic *suga vacui*; a suspensive force, or rather attraction, was assigned to the upper part of the tube. But the true explanation of the phenomenon is easy and satisfactory. Suppose the mercury in the cistern and tube to freeze, but without adhering to the tube, so that the tube could be freely drawn up and down; in this case the mercury is supported by the base, without any dependence on the pressure of the air; the tube is in the same condition as before, and the solid mercury performs the office of a piston to this kind of syringe. Suppose the tube thrust down till the top of it touches the top of the mercury; it is evident that it must be drawn up in opposition to the pressure of the external air, and it is precisely similar to the syringe mentioned above. The weight sustained therefore by this arm of the balance is the weight of the tube and the downward pressure of the atmosphere on its top. The curiosity of philosophers being thus excited by this very manageable experiment, it was natural now to try the original experiment proposed by Galileo. Accordingly Berti in Italy, Paschal in France, and many others in different places, made the experiment with a tube filled with water, wine, oil, &c. and had all with the success which might be expected in so simple a matter: and the doctrine of the weight and pressure of the air was decisively established beyond contradiction of doubt, before 1648.

The doctrine of the gravity and pressure of the air being thus established by the most unexceptionable evidence, we are entitled to assume it as a statical principle, and to affirm *a priori* all its legitimate consequences.

Hence we obtain an exact measure of the pressure of the atmosphere. It is precisely equal to the weight of the column of mercury, of water, oil, &c. which it can support; and the Torricellian tube, or others fitted up upon the same principle, are justly termed *baroscopes* and *barometers* with respect to the air. Now water is supported at the height of 32 feet nearly: The weight of the column is exactly 2000 lb. avoirdupois on every square foot of base, or 13 and nine tenths on every square inch. The same conclusion very nearly may be drawn from the columns

of mercury, which is nearly 29½ inches high when in equilibrium with the pressure of the air. The measure taken from the height of a column of water, wine, spirits, and the other fluids of considerable volatility, is not so exact as that taken from mercury, oil, and the like. For the volatile fluids are converted by the ordinary heat of our climates into vapour when the confining pressure of the air is removed; and this vapour, by its elasticity, exerts a small pressure on the surface of the water, &c. in the pipe, and thus counteracts a small part of the external pressure; and therefore the column supported by the remaining pressure must be lighter, that is, shorter. Thus it is found, that rectified spirits will not stand much higher than is competent to a weight of 13 lb. on an inch, the elasticity of its vapour balancing about $\frac{1}{7}$ of the pressure of the air.

The medium height of the mercury in the barometer being 29½ inches, we see that the whole globe sustains a pressure equal to the whole weight of a body of mercury of this height; and that all bodies on its surface sustain a part of this in proportion to their surfaces. An ordinary sized man sustains a pressure of several thousand pounds. How comes it then that we are not sensible of a pressure which one should think enough to crush us together? This has been considered as a strong objection to the pressure of the air, for when a man is plunged a few feet under water, he is very sensible of the pressure. The answer is by no means easy. We feel very distinctly the effects of removing this pressure from any part of the body. If any one will apply the open end of a syringe to his hand, and then draw up the piston, he will find his hand sucked into the syringe with great force, and it will give pain; and the soft part of the hand will swell into it, being pressed in by the neighbouring parts, which are subject to the action of the external air. If one lays his hand on the top of a long perpendicular pipe, such as a pump fixed to the brim with water, which is at first prevented from running out by the valve below; and if the valve be then opened, so that the water descends, he will then find his hand so hard pressed to the top of the pipe that he cannot draw it away. But why do we only feel the inequality of pressure? There is a similar instance wherein we do not feel it, although we cannot doubt of its existence. When a man goes slowly to a great depth under water in a diving-bell, we know unquestionably that he is exposed to a new and very great pressure, yet he does not feel it. But those facts are not sufficiently familiar for general argument. The human body is a bundle of solids, hard or soft, filled or mixed with fluids, and there are few or no parts of it which are empty. All communicate either by vessels or pores; and the whole surface is a sieve through which the insensible perspiration is performed. The whole extended surface of the lungs is open to the pressure of the atmosphere; every thing is therefore in equilibrio: and if free or speedy access be given to every part, the body will not be damaged by the pressure, however great, any more than a wet sponge would be deranged by plunging it any

depth in water. The pressure is instantaneously diffused by means of the incompressible fluids with which the parts are filled; and if any parts are filled with air or other compressible fluids, these are compressed till their elasticity again balances the pressure. Besides, all our fluids are acquired slowly and gradually mixed with that proportion of air which they can dissolve or contain. The whole animal has grown up in this manner from the first vital atom of the embryo. For such reasons the pressure can occasion no change of shape by squeezing together the flexible parts; nor any obstruction by compressing the vessels or pores. We cannot say what would be felt by a man, were it possible that he could have been produced and grown up *in vacuo*, and then subjected to the compression. We even know that any sudden and considerable change of general pressure is very severely felt. Persons in a diving-bell have been almost killed by letting them down or drawing them up too suddenly. In drawing up, the elastic matters within have suddenly swelled, and not finding an immediate escape have burst the vessels. Dr Hally experienced this, the blood gushing out from his ears by the expansion of air contained in the internal cavities of this organ, from which there are but very slender passages.

Here a very important observation recurs: the pressure of the atmosphere is variable. This was observed almost as soon as philosophers began to attend to the barometer. Pascal observed it in France, and Descartes in Sweden in 1630. Mr Boyle and others observed it in England in 1656. And before this, observers, who took notice of the concomitancy of these changes of aerial pressure with the state of the atmosphere, remarked, that it was generally greatest in winter and in the night; and certainly most variable during winter and in the northern regions. Familiar now with the weight of the air, and considering it as the vehicle of the clouds and vapours, they noted with care the connection between the weather and the pressure of the air, and found that a great pressure of the air was generally accompanied with fair weather, and a diminution of it with rain and mists. Hence the barometer came to be considered as an index not only of the state of the air's weight, but also as indicating by its variations and changes of weather. It became a *WEATHER-GLASS*, and continued to be anxiously observed with this view.

In the next place, we may conclude that the pressure of the air will be different in different places, according to their elevation above the surface of the ocean; for if air be a heavy fluid, it must press in proportion to its perpendicular height. If it be a homogeneous fluid of equal density and weight in all its parts, the mercury in the cistern of a barometer must be pressed precisely in proportion to the depth to which that cistern is immersed in it; and as this pressure is exactly measured by the height of the mercury in the tube, the height of the mercury in the Torricellian tube must be exactly proportional to the depth of the place of observation under the surface of the atmosphere.

DESCARTES

DESCARTES first entertained this thought (Epist. 67. of Pr. III.), and soon after him PASCHAL; who published an account of this great experiment (*Grande Exp. sur la Pesanteur de l'Air*), and it was quickly repeated in many places of the world. In 1653 it was repeated in England by Dr POWER (*Power's Exper. Phil.*); and in Scotland, in 1661, by Mr SINCLAIR professor of philosophy in the university of Glasgow, who observed the barometer at Lanark, on the top of mount Tintock in Clydesdale, and on the top of Arthur's Seat at Edinburgh. He found a depression of two inches between Glasgow and the top of Tintock, $\frac{1}{2}$ of an inch between the bottom and top of Arthur's Seat, and five $\frac{3}{4}$ ds of an inch at the cathedral of Glasgow on a height of 126 feet. See Sinclair's *Arts Nova et Magna Gravitatis et Levitatis*; Sturmii *Collegium Experimentale*, and Schotti *Technica Curiosa*.

Hence is derived a method of measuring the heights of mountains. Having ascertained with great precision the elevation corresponding to a fall of one tenth of an inch of mercury, which is nearly 90 feet, we have only to observe the length of the mercurial column at the top and bottom of the mountain, and to allow 90 feet for every tenth of an inch. Accordingly this method has been practised with great success: but it requires an attention to many things not yet considered; such as the change of density of the mercury by heat and cold; the changes of density of the air, which are much more remarkable from the same causes; and above all, the changes of the density of air from its compressibility; a change immediately connected with or dependent on the very elevation we wish to measure.

These observations give us the most accurate measure of the density of the air and its specific gravity. This is but vaguely, though directly, measured by weighing air in a bladder or vessel. The weight of a manageable quantity is so small, that a balance sufficiently ticklish to indicate even very sensible fractions of it is overloaded by the weight of the vessel which contains it, and ceases to be exact: and when we take Bernoulli's ingenious method of suspending it in water, we expose ourselves to great risk of error by the variation of the water's density. Also it must necessarily be humid air which we can examine in this way: but the proportion of an elevation in the atmosphere to the depression of the column of mercury or other fluid, by which we measure its pressure, gives us at once the proportion of this weight, or their specific gravity. Thus, since in such a state of pressure the barometer stands at 30 inches, and the thermometer at 32°, 87 feet of rise produces one 10th of an inch of fall in the barometer, the air and the mercury being both of the freezing temperature, we must conclude that mercury is 10 $\frac{1}{4}$ ds times heavier or denser than air. Then, by comparing mercury and water, we get one 801 nearly for the density of air relative to water: but this varies so much by heat and moisture, that it is useless to retain any thing more than a general notion of it; nor is it easy to determine whether this method or that by actual weighing is preferable. It is extremely difficult to observe the height of the mercury in the barometer nearer than one 200th

of an inch; and this will produce a difference of even five feet, or one 16th of the whole. Perhaps this is a greater proportion than the error in weighing.

From the same experiments also we derive some knowledge of the height of the aerial covering which furrounds our globe. When we raise our barometer 87 feet above the surface of the sea, the mercury falls about one tenth of an inch in the barometer: therefore, if the barometer shows 30 inches at the sea-shore, we may expect that, by raising it 300 times 87 feet or 3 miles, the mercury in the tube will descend to the level of the cistern, and that this is the height of our atmosphere. But other appearances lead us to suppose a much greater height. Meteors are seen with us much higher than this, and which yet give undoubted indication of being supported by our air. There can be little doubt, too, that the visibility of the expanse above us is owing to the reflection of the sun's light by our air. Were the heavenly spaces perfectly transparent, we should no more see them than the purest water through which we see other objects; and we see *them* as we see water tinged with milk or other fæculæ. Now it is easy to show, that the light which gives us what is called twilight must be reflected from the height of at least 50 miles; for we have it when the sun is depressed 18° below our horizon.

An attention to the constitution of our air may convince us, that the atmosphere must extend to a much greater height than 300 times 87 feet. We see from the most familiar facts that it is compressible; we can squeeze it in an ox-bladder. It is also heavy; pressing on the air in this bladder with a very great force, not less than 1500 lb. We must therefore consider it as in a state of compression, existing in smaller room than it would assume if it were not compressed by the incumbent air. It must be in a condition something resembling that of a quantity of fine carded wool thrown loosely into a deep pit; the lower strata carrying the weight of the upper strata, and being compressed by them; and so much the more compressed as they are further down, and only the upper stratum in its unconstrained and most expanded state. If we shall suppose this wool thrown in by a hundred weight at a time, it will be divided into strata of equal weights, but of unequal thickness; the lowest being the thinnest, and the superior strata gradually increasing in thickness. Now, suppose the pit filled with air, and reaching to the top of the atmosphere, the *weights* of all the strata above any horizontal plane in it is measured by the height of the mercury in the Torricellian tube placed in that plane; and one tenth of an inch of mercury is just equal to the weight of the lowest stratum 87 feet thick; for on raising the tube 87 feet from the sea, the surface of the mercury will descend one tenth of an inch. Raise the tube till the mercury fall another tenth. This stratum must be more than 87 feet thick; how much more we cannot tell, being ignorant of the law of the air's expansion. In order to make it fall a third tenth, we must raise it through a stratum still thicker; and so on continually. All this is abundantly confirmed by various experiments.

Having thus considered the leading consequences

of the air's fluidity and gravity, let us consider its compressibility; and then, combining the agency of both, we shall discover the laws, explain the phenomena of nature, and improve art. All fluids are elastic and compressible as well as air; but in them the compressibility makes no figure, or does not interest us while we are considering their pressures, motions, and impulsions. But in air the compressibility and expansion draw our chief attention, and make it a proper representative of this class of fluids.

Nothing is more familiar than the compressibility of air. It is seen in a bladder filled with it, which we can forcibly squeeze into less room; it is seen in a syringe, of which we can push the plug farther and farther as we increase the pressure. But these appearances bring into view another, and the most interesting, property of air, *viz.* its ELASTICITY. When we have squeezed the air in the bladder or syringe into less room, we find that the force with which we compressed it is necessary to keep it in this bulk; and that if we cease to press it together, it will swell out and regain its natural dimensions. This distinguishes it essentially from such a body as a mass of flour, salt, or such like, which remain in the compressed state to which we reduce them.

There is therefore something which opposes the compression different from the simple impenetrability of the air; there is something that opposes mechanical force; there is something too which produces motion, not only resisting compression, but pushing back the compressing body, and communicating motion to it. As an arrow is gradually accelerated by the bow-string pressing it forward, and at the moment of its discharge is brought to a state of rapid motion; so the ball from a pop-gun or wild-gun is gradually accelerated along the barrel by the pressure of the air during its expansion from its compressed state, and finally quits it with an accumulated velocity. These two motions are indications perfectly similar of the elasticity of the bow and of the air.

Thus it is evident that air is heavy and elastic. It needs little consideration to convince us that it is fluid. The ease with which it is penetrated, and driven about in every direction, and the motion of it in pipes and channels, however crooked and intricate, entitle it to this character. But before we can proceed to deduce consequences from its fluidity, and to offer them as a true account of what will happen in these circumstances, it is necessary to exhibit some distinct and simple case, in which the characteristic mechanical property of a fluid is clearly and unequivocally observed in it. That property of fluids from which all the laws of hydrostatics and hydraulics are derived with the strictest evidence is, that any pressure applied to any part of them is propagated through the whole mass in every direction; and that in consequence of this diffusion of pressure, any two external forces can be put in equilibrio by the interposition of a fluid, in the same way as they can be put in equilibrio by the intervention of any mechanical engine.

Let a close vessel ABC (*Pl.* 278, *fig.* 2.) of any form, have two upright pipes EDC, GFB, inserted into any parts of its top, sides, or bottom, and

let water be poured into them, so as to stand in equilibrio with the horizontal surfaces at E, D, G, F, and let Dd, Ff, be horizontal lines; it will be found that the height of the column Ed is sensibly equal to that of the column Gf. This is a fact universally observed in whatever way the pipes are inserted. Now the surface of the water at D is undoubtedly pressed upwards with a force equal to a column of water, having its surface for its base, and Ed for its height; it is therefore prevented from rising by some opposite force. This can be nothing but the elasticity of the confined air pressing it down. The very same thing must be said of the surface at F; and thus there are two external pressures at D and F set in equilibrio by the interposition of air. The force exerted on the surface D, by the pressure of the column Ed, is therefore propagated to the surface at F; and thus air has this characteristic mark of fluidity.

In this experiment the weight of the air is insensible when the vessel is of small size, and has no sensible share in the pressure reaching at D and F. But if the elevation of the point F above D is very great, the column Ed will be observed sensibly to exceed the column Gf. Thus if F be 70 feet higher than D, Ed will be an inch longer than the column Gf; for in this case there is reaching at D, not only the pressure propagated from F, but also the weight of a column of air, having the surface at D for its base, and 70 feet high. This is equal to the weight of a column of water one inch high. It is by this propagation of pressure, this FLUIDITY, that the pellet is discharged from a child's pop-gun. It sticks fast in the muzzle; and he forces in another pellet at the other end, which he presses forward with the rammer, condensing the air between them, and thus propagating to the other pellet the pressure which he exerts, till the friction is overcome, and the pellet is discharged by the air expanding and following it.

We may now apply to air all the laws of HYDROSTATICS and HYDRAULICS, perfectly confident that their legitimate consequences will be observed in all its situations. We shall in future, substitute in place of any force acting on a surface of air, a column of water, mercury, or any other fluid whose weight is equal to this force; and as we know distinctly from theory what will be the consequences of this hydrostatic pressure, we shall determine *a priori* the phenomena in air; and in cases where theory does not enable us to say with precision what is the effect of this pressure, experience informs us in the case of water, and analogy enables us to transfer this to air. We shall find this of great service in some cases, which otherwise are almost desperate in the present state of our knowledge. From such familiar and simple observations and experiments, the fluidity, the heaviness, and elasticity, are discovered of the substance with which we are surrounded, and which we call air. But to understand these properties, and completely to explain their numerous and important consequences, we must call in the aid of more refined observations and experiments which even this scanty knowledge of them enables us to make; we must contrive some methods of producing with precision any degree of condensation or rarefaction, of employing or excluding the gravitating

vitating pressure of air, and of modifying at pleasure the action of all its mechanical properties.

To compress a quantity of air to any degree, Take a cylinder or prismatic tube AB (*Pl.* 278, *fig.* 3.) shut at one end, and fit it with a piston or plug C, so nicely that no air can pass by its sides. This will be best done in a cylindric tube by a turned stopper, covered with oiled leather, and fitted with a long handle CD. When this is thrust down, the air which formerly occupied the whole capacity of the tube is condensed into less room. The force necessary to produce any degree of compression may be concluded from the weight necessary for pushing down the plug to any depth. But this instrument leaves us little opportunity of making interesting experiments on or in this condensed air; and the force required to make any degree of compression cannot be measured with much accuracy; because the piston must be very close, and have great friction, in order to be sufficiently tight: And as the compression is increased, the leather is more squeezed to the side of the tube; and the proportion of the external force, which is employed merely to overcome this variable and uncertain friction, cannot be ascertained with any tolerable precision.

To get rid of these imperfections, the following addition may be made to the instrument, which then becomes what is called the *condensing syringe*. The end of the syringe is perforated with a very small hole *ef*; and being externally turned to a small cylinder, a narrow slip of bladder, or of thin leather, soaked in a mixture of oil and tallow, must be tied over the hole. Suppose the piston pushed down to the bottom of the barrel to which it applies close; when it is drawn up to the top, it leaves a void behind, and the weight of the external air presses on the slip of bladder, which therefore claps close to the brass, and thus performs the part of a valve, and keeps it close so that no air can enter. But the piston having reached the top of the barrel, a hole F in the side of it is just below the piston, and the air rushes through this hole and fills the barrel. Push the piston down again, it immediately passes the hole F, and no air escapes through it; it therefore forces open the valve at *f*, and escapes while the piston moves to the bottom.

Let E be any vessel, such as a glass bottle, having its mouth furnished with a brass cap firmly cemented to it, having a hollow screw which fits a solid screw *pg*, turned on the cylindric nozzle of the syringe. Screw the syringe into this cap, and it is evident that the air forced out of the syringe will be accumulated in this vessel: for upon drawing up the piston the valve *f* always shuts by the elasticity or expanding force of the air in E; and on pushing down again, the valve will open as soon as the piston has got so far down that the air in the lower part of the barrel is more powerful than the air already in the vessel. Thus at every stroke an additional barrellful of air will be forced into the vessel E; and it will be found, that after every stroke the piston must be farther pushed down before the valve will open. It cannot open till the pressure arising from the elasticity of the air condensed in the barrel is superior to the elasticity of the air condensed in the vessel; that is, till the

condensation of the first, or its density, is *some-what* greater than that of the last, in order to overcome the straining of the valve on the hole and the sticking occasioned by the clammy matter employed to make it air-tight.

Sometimes the syringe is constructed with a valve in the piston. This piston, instead of being of one piece and solid, consists of two pieces perforated. The upper part *kum* is connected with the rod or handle, and has its lower part turned down to a small cylinder, which is screwed into the lower part *k'lon*; and has a perforation *gh* going up in the axis, and terminating in a hole *b* in one side of the rod, a piece of oiled leather is strained across the hole *g*. When the piston is drawn up and a void left below it, the weight of the external air forces it through the hole *bg*, opens the valve *g*, and fills the barrel. Then, on pushing down the piston, the air being squeezed into less room, presses on the valve *g*, shuts it; and none escaping through the piston, it is gradually condensed as the piston descends till it opens the valve *f*, and is added to that already accumulated in the vessel E.

Having thus forced a quantity of air into the vessel E, we can make many experiments in it in this state of condensation. We are chiefly concerned at present with the effect which this produces on its elasticity. We see this to be greatly increased; for we find more and more force required for introducing every successive barrellful. When the syringe is unscrewed, we see the air rush out with great violence, and every indication of great expanding force. If the syringe be connected with the vessel E in the same manner as the syringe before described, by interposing a stop-cock B between them, (*see fig. 1.*) and if this stop-cock have a pipe at its extremity, reaching near to the bottom of the vessel, which is previously half filled with water, we can observe distinctly when the elasticity of the air in the syringe exceeds that of the air in the receiver: for the piston must be pushed down a certain length before the air from the syringe bubbles up through the water, and the piston must be farther down at each successive stroke before this appearance is observed. When the air has thus been accumulated in the receiver, it presses the sides of it outward, and it will burst if not strong enough. It also presses on the surface of the water; and if we now shut the cock, unscrew the syringe, and open the cock again, the air will force the water through the pipe with great velocity, causing it to rise in a beautiful jet. When a metal receiver is used, the condensation may be pushed to a great length, and the jet will then rise to a great height; which gradually diminishes as the water is expended and room given to the air to expand itself. *See fig. 3.*

It is accurately measured by a gage fitted to the instrument. A glass tube GH of a cylindric bore, and close at the end, is screwed into the side of the cap on the mouth of the vessel E. A small drop of water or mercury is taken into this tube by warming it a little in the hand, which expands the contained air, so that when the open end is dipped into water, and the whole allowed to cool, the water advances a little into the tube. The tube is furnished with a scale divided into small

T t t t

equal

equal parts, numbered from the close end of the tube. Since this tube communicates with the vessel, it is evident that the condensation will force the water along the tube, acting like a piston on the air beyond it, and the air in the tube and vessel will always be of one density. Suppose the number at which the drop stands before the condensation is made to be c , and that it stands at d when the condensation has attained the degree required, the density of the air in the remote end of the gage, and consequently in the vessel, will be $\frac{c}{d}$.

Sometimes there is used a bit of tube close at one end, having a drop of water in it, simply laid into the vessel E, and furnished or not with a scale; but this can only be used with glass vessels, and these are too weak to resist the pressure arising from great condensation. In such experiments metalline vessels are used, fitted with a variety of apparatus for different experiments. Some of these will be occasionally mentioned afterwards.

Very great condensations require great force, and therefore small syringes. It is therefore convenient to have them of various sizes, and to begin with those of a larger diameter, which operate more quickly; and when the condensation becomes fatiguing, to change the syringe for a smaller. For this reason, and in general to make the condensing apparatus more convenient, it is proper to have a stop-cock interposed between the syringe and the vessel, or, as it is usually called, the receiver. This consists of a brass pipe, which has a well-ground cock in its middle, and has a hollow screw at one end, which receives the nozzle screw of the syringe, and a solid screw at the other end, which fits the screw of the receiver. See *fig. 1*.

By these gages, or similar contrivances, we can ascertain very great degrees of condensation in the course of some experiments. Dr Hales found, that when dry wood was put into a strong vessel, which it almost filled, and the remainder was filled, with water, the swelling of the wood, occasioned by its imbibition of water, condensed the air of his gage into the thousandth of its original bulk. He found that pease treated in the same way generated elastic air, which pressing on the air in the gage condensed it into the 1500th part of its bulk. This is the greatest condensation that has been ascertained with precision, although in other experiments it has certainly been carried much farther; but the precise degree could not be ascertained. The only use to be made of this observation at present is, that since we have been able to exhibit air in a density a thousand times greater than the ordinary density of the air we breathe, it cannot, as some imagine, be only a different form of water; for in this state it is as dense or denser than water, and yet retains its great expansibility.

Another important observation is, that in every state of density in which we find it, it retains its perfect fluidity, transmitting all pressures which are applied to it with undiminished force, as appears by the equality constantly observed between the opposing columns of water or other fluid by

which it is compressed, and by the facility with which all motions are performed in it in the most compressed states in which we can make observations of this kind. This fact is totally incompatible with the fanciful opinion of those who ascribe the elasticity of air to the springy ramified structure of its particles, touching each other like so many pieces of sponge.

We have seen that air is heavy and compressible, and might now proceed to deduce in order the explanation of the appearances consequent on each of these properties. But the elasticity of air modifies the effects of its gravity so remarkably, that they would be imperfectly understood if both quantities were not combined in our consideration of either. At any rate, some farther consequences of its elasticity must be considered, before we understand the means of varying at pleasure the effects of its gravity.

Since air is heavy, the lower strata of a mass of air must support the upper; and being compressible, they must be condensed by their weight. In this state of compression the elasticity of the lower strata of air acts in opposition to the weight of the incumbent air, and balances it. There is no reason which should make us suppose that its expanding force belongs to it only when in such a state of compression. It is more probable, that, if we could free it from this pressure, the air would expand into still greater bulk. This is most distinctly seen in the following experiment.

Into the cylindric jar ABCD (*fig. 4*), which has a small hole in its bottom, and is furnished with an air-tight piston E, put a small flaccid bladder, having its mouth tied tight with a string. Having pushed the piston near to the bottom, and noticed the state of the bladder, stop up the hole in the bottom of the jar with the finger, and draw up the piston, which will require a considerable force. You will observe the bladder swell out, as if air had been blown into it; and it will again collapse on allowing the piston to descend. Nothing can be more unexceptionable than the conclusion from this experiment, that ordinary air is in a state of compression, and that its elasticity is not limited to this state. The bladder being flaccid, shows that the included air is in the same state with the air which surrounds it; and the same must be affirmed of it while it swells but still remains flaccid. We must conclude, that the whole air within the vessel expands, and continues to fill it, when its capacity has been enlarged. And since this is observed to go on as long as we give it more room, we conclude, that by such experiments we have not yet given it so much room as it can occupy.

It was a natural object of curiosity to discover the limits of this expansion; to know what was the natural unconstrained bulk of a quantity of air, beyond which it would not expand though all external compressing force were removed. Accordingly philosophers constructed instruments for rarifying the air. The common water-pump had been long familiar, and appeared very proper for this purpose: The most obvious is the following:—Let the barrel of the syringe AB (*fig. 5*) communicate with the vessel V, with a stop-cock C between them. Let it communicate with

the external air by another orifice D, in any convenient situation, also furnished with a stop-cock. Let this syringe have a piston very accurately fitted to it, so as to touch the bottom all over when pushed down, and have no vacancy about the sides. Suppose the piston at the bottom, the cock C open, and the cock D shut, draw the piston to the top. The air which filled the vessel V will expand so as to fill both that vessel and the barrel AB; and as no reason can be given to the contrary, we must suppose that the air will be uniformly diffused through both. Calling V and B the capacity of the vessel and barrel, it is plain that the bulk of the air will now be $V + B$; and since the quantity of matter remains the same, and the density of a fluid is as its quantity of matter directly, and its bulk inversely, the density of the expanded air

will be $\frac{V}{V+B}$, the density of common air being

$$1: \text{for } V+B:V=1:\frac{V}{V+B}.$$

The piston requires force to raise it, and it is raised in opposition to the pressure of the incumbent atmosphere; for this had formerly been balanced by the elasticity of the common air; and we conclude from the fact, that force is required to raise the piston, that the elasticity of the expanded air is less than that of air in its ordinary state; and an accurate observation of the force necessary to raise it would show how much the elasticity is diminished. When therefore the piston is let go, it will descend as long as the pressure of the atmosphere exceeds the elasticity of the air in the barrel; that is, till the air in the barrel is in a state of ordinary density. To put it further down will require force, because the air must be compressed in the barrel; but if we now open the cock D, the air will be expelled through it, and the piston will reach the bottom.

Now shut the discharging cock D, and open the cock C, and draw up the piston, the air which occupied the space V, with the density $\frac{V}{V+B}$, will now occupy the space $V+B$, if it expands so far. To have its density D, say, As its present bulk $V+B$ is to its former bulk V, so is its former density $\frac{V}{V+B}$ to its new density; which will

$$\text{therefore be } \frac{V \times V}{V+B \times V+B}, \text{ or } \frac{V}{V+B}.$$

It is evident, that if the air continues to expand, the density of the air in the vessel after the third drawing up of the piston will be $\frac{V}{V+B}$,

after the fourth it will be $\frac{V}{V+B}$, and after any

number of strokes n will be $\frac{V}{V+B}$. Thus, if the vessel is four times as large as the barrel, the density after the fifth stroke will be $\frac{1}{5}$ nearly $\frac{1}{5}$ of its ordinary density.

On the other hand, the number n of strokes necessary for reducing air to the density D is

$$\text{Log D} \\ \text{Log V} - \text{Log (V+B)}.$$

Thus we see that this instrument can never abstract the whole air in consequence of its expansion but only rarefy it continually as long as it continues to expand; nay, there is a limit beyond which the rarefaction cannot go. When the piston has reached the bottom, there remains a small space between it and the cock C filled with common air. When the piston is drawn up, this small quantity of air expands, and also a similar quantity in the neck of the other cock; and no air will come out of the receiver V till the expanded air in the barrel is of a smaller density than the air in the receiver. This circumstance evidently directs us to make these two spaces as small as possible, or by some contrivance to fill them up altogether. Perhaps this may be done effectually in the following manner.

Let BE (fig. 6.) represent the bottom of the barrel, and let the circle HKI be the section of the key of the cock, of a large diameter, and place it as near to the barrel as can be. Let this communicate with the barrel by means of an hole FG widening upwards, as the frustum of a hollow obtuse cone. Let the bottom of the piston $bfbge$ be shaped so as to fit the bottom of the barrel and this hole exactly. Let the cock be pierced with two holes. One of them, HI, passes perpendicularly through its axis, and forms the communication between the receiver and barrel. The other hole, KL, has one extremity K on the same circumference with H, so that when the key is turned a fourth part round, K will come into the place of H; but this hole is pierced obliquely into the key, and thus keeps clear of the hole HI. It goes no further than the axis, where it communicates with a hole bored along the axis, and terminating at its extremity. This hole forms the communication with the external air, and serves for discharging the air in the barrel. (A side view of the key is seen in fig. 7.) Fig. 5. shows the position of the cock while the piston is moving upwards, and fig. 6. shows its position while the piston is moving downwards. When the piston has reached the bottom, the conical piece fhg of the piston, which may be of firm leather, fills the hole FHG, and therefore completely expels the air from the barrel. The canal KLI of the cock contains air of the common density; but this is turned aside into the position KL (fig. 6.), while the piston is still touching the cock. It cannot expand into the barrel during the ascent of the piston. In place of it the perforation HLI comes under the piston, filled with air that had been turned aside with it when the piston was at the top of the barrel, and therefore of the same density with the air of the receiver. It appears therefore that there is no limit to the rarefaction as long as the air will expand.

This instrument is called an EXHAUSTING SYRINGE. It is more generally made in another form, which is much less expensive, and more convenient in its use. Instead of being furnished with cocks for establishing the communications and shutting them, as is necessary, it has valves like those of the condensing syringe, but opening in the opposite direction. It is thus made:

The pipe of communication or conduit MN (fig. 8.) has a male screw in its extremity, and

over

over this is tied a slip of bladder or leather M. The lower half of the piston has also a male screw on it, covered at the end with a slip of bladder O. This is screwed into the upper half of the piston, which is pierced with a hole H coming out of the side of the rod.

Now, suppose the syringe screwed to the conducting pipe, and that screwed into the receiver V, and the piston at the bottom of the barrel. When the piston is drawn up, the pressure of the external air shuts the valve O, and a void is left below the piston; there is therefore no pressure on the upper side of the valve M to balance the elasticity of the air in the receiver, which formerly balanced the weight of the atmosphere. The air, therefore in the receiver lifts this valve, and distributes itself between the vessel and the barrel; so that, when the piston has reached the top, the density of the air in both receiver and barrel is as

$$\text{before } \frac{V}{V+B}.$$

When the piston is let go, it descends, because the elasticity of the expanded air is not a balance for the pressure of the atmosphere, which therefore presses down the piston with the difference, keeping the piston-valve shut all the while. At the same time the valve M also shuts; for it was opened by the prevailing elasticity of the air in the receiver, and while it is open the two airs have equal density and elasticity; but the moment the piston descends, the capacity of the barrel is diminished, the elasticity of its air increases by collapsing, and now prevailing over that of the air in the receiver shuts the valve M.

When it has arrived at such a part of the barrel that the air in it is of the density of the external air, there is no force to push it farther down; the hand must therefore press it. This attempts to condense the air in the barrel, and therefore increases its elasticity; so that it lifts the valve O and escapes, and the piston gets to the bottom. When drawn up again, greater force is required than the last time, because the elasticity of the included air is less than in the former stroke. The piston rises further before the valve M is lifted up, and when it has reached the top of the barrel the

density of the included air is $\frac{V}{V+B}$. The piston,

when let go, will descend farther than it did before ere the piston-valve open, and the pressure of the hand will again push it to the bottom, all the air escaping through O. The rarefaction will go on at every successive stroke in the same manner as with the other syringe.

This syringe is evidently more easy in its use, requiring no attendance to the cock to open and shut them at the proper times. On this account this construction of an exhausting syringe is much more generally used.

But it is greatly inferior to the syringe with cocks with respect to its power of rarefaction. Its operation is greatly limited. It is evident that no air will come out of the receiver unless its elasticity exceed that of the air in the barrel by a difference able to lift up the valve M. A piece of oiled leather tied across this hole can hardly be made tight and certain of clapping to the hole, without

some small straining, which must therefore be overcome. It must be very gentle indeed not to require a force equal to the weight of two inches of water, and this is equal to about the 200th part of the whole elasticity of the ordinary air; and therefore this syringe, for this reason alone, cannot rarely air above 200 times, even though air were capable of an indefinite expansion. In like manner the valve O cannot be raised without a similar prevalence of the elasticity of the air in the barrel above the weight of the atmosphere. These causes united, make it difficult to rarely the air more than 100 times, and very few such syringes will rarely it more than 50 times; whereas the syringe with cocks, when new and in good order, will rarely it 1000 times.

But, on the other hand, syringes with cocks are much more expensive, especially when furnished with apparatus for opening and shutting the cocks. They are more difficult to make equally tight, and, which is the greatest objection, do not remain long in good order. The cocks, by so frequently opening and shutting, grow loose, and allow the air to escape. No method has been found of preventing this. They must be ground tight by means of emery or other cutting powders. Some of these unavoidably stick in the metal, and continue to wear it down. For this reason philosophers, and the makers of philosophical instruments, have turned their chief attention to the improvement of the syringe with valves. We have been thus minute in our account of the operation of rarefaction, that the reader may better understand the value of these improvements, and in general the operation of the principal pneumatic engines.

SECT. II. HISTORY of the Air-Pump.

AN AIR-PUMP is nothing but an exhausting syringe accommodated to a variety of experiments. It was first invented by Otto Guericke, a gentleman of Magdeburgh in Germany, about the year 1654. See AIR-PUMP, and GUERICKE. This instrument, which now makes a principal article in a philosophical apparatus, was at first very rude and imperfect, and therefore a description of it in its original form is unnecessary. But with all its defects, and slowness of operation, which, by the inventor's own account, took several hours to prepare it, Guericke exhibited with it many entertaining experiments before his friends upon the *rarefaction of air*. Being a counsellor and a gentleman of fortune, he made no secret of his invention, but allowed his friend Gaspar Schottus, professor, of mathematics, at Wirtemberg, to publish a particular description of it, in two of his works, in 1657 and 1664. His principal object in the invention was the exhaustion of air, and in the prosecution of this, he discovered that the *expansion of air* is unlimited. This was a doctrine then quite new, and from his letter to Schottus on the subject, it appears that his manner of investigation was as remarkable for philosophical ingenuity as for modesty. In another letter to Schottus he describes very ingenious contrivances for producing complete rarefaction, after the elasticity of the remaining air has been so far diminished, that it is not able to open the valves. These contrivances

of Guericke's have since been added to air-pumps, by Haas and Hurter, as new Inventions.

GUERICKE's doctrine and his machine soon made a noise over all Europe. About this period the foundations of the Royal Society of London were laid. Mr Boyle, Lord Brouncker, Dr Wallis, Mr Wren, and other learned men, met at Oxford, and made various experiments on philosophical subjects. Mr Boyle having seen Schottus's first publication, began to construct a machine from his own ideas, no description of Guericke's being then published. This instrument, with the various interesting experiments he exhibited with it, soon eclipsed the fame of Guericke to such a degree, that the air-pump was called *Machina Boyleana*, and the state of air in the receiver *vacuum Boyleanum*. He soon made farther improvements.

Mr BOYLE, having discovered, that to make a vessel air-tight, it was sufficient to put a piece of wet or oiled leather on its brim, and to lay a flat piece of metal on this; and that the pressure of the external air squeezed the two solid bodies so hard together, that it was effectually excluded by the soft leather, he soon rendered the whole machine much more complete. In this he was assisted by Dr Hooke, the most ingenious and inventive man of the age; who, by applying two syringes, whose piston rods were worked by the same wheel, as in *fig. 9*, and putting valves in the pistons, as in those of a common pump, not only doubled the expedition of the operation, but diminished the labour of pumping. This is therefore the form of the air-pump now generally used, with some trifling variations, all over Europe.

Mr BOYLE's air-pump, as finally improved by HAWKESBEE, which, with some accommodations to particular views, still remains the most approved form, consists of two brass barrels *a a*, (*fig. 10. Pl. 278.*), 12 inches high and 2 wide. The pistons are raised and depressed by turning the winch *b b*. This is fastened to an axis passing through a strong toothed wheel, which lays hold of the teeth of the racks *c c c c*. Then the one is raised while the other is depressed; by which means the valves, which are made of limber bladder, fixed in the upper part of each piston, as well as in the openings into the bottom of the barrels, performing their office of discharging the air from the barrels, and admitting into them the air from the receiver to be afterwards discharged; and when the receiver comes to be pretty well exhausted of its air, the pressure of the atmosphere in the descending piston is nearly so great, that the power acquired to raise the other is little more than is necessary for overcoming the friction of the piston, which renders this pump preferable to all others, which require more force to work them as the rarefaction of the air in the receiver advances. The barrels are set in a brass dish about two inches deep, filled with water or oil to prevent the insinuation of air. The barrels are screwed tight down by the nuts *e, e, e*, which force the frontispiece *f f* down on them, through which the two pillars *g g, g g* pass.

From between the barrels rises a slender brass pipe *b b*, communicating with each by a perforation in the transverse piece of brass on which they stand. The upper end of this pipe communicates

with another perforated piece of brass, which screws on underneath the plate *i i i i*, of ten inches diameter, and surrounded with a brass rim to prevent the shedding of water used in some experiments. This piece of brass has three branches: 1st, An horizontal one communicating with the conduit-pipe *h h*. 2. An upright one screwed into the middle of the pump-plate, and terminating in a small pipe *k*, rising about an inch above it. 3d, Is a perpendicular one, looking downwards in the continuation of the pipe *k*, and having a hollow screw in its end receiving the brass cap of the gage-pipe *l l l l*, which is of glass, 34 inches long and immersed in a glass cistern *m m* filled with mercury. This is covered a-top with a cork float, carrying the weight of a light wooden scale divided into inches, which are numbered from the surface of the mercury in the cistern. This scale will therefore rise and fall with the mercury in the cistern, and indicate the true elevation of that in the tube.

There is a stop-cock immediately above the insertion of the gage-pipe, by which its communication may be cut off. There is another at *n*, by which a communication is opened with the external air for allowing its readmission; and there is sometimes another immediately within the insertion of the conduit-pipe for cutting off the communication between the receiver and the pump. This is particularly useful when the rarefaction is to be continued long, as there are by these means fewer chances of the insinuation of air by the many joints.

The receivers are made tight by simply setting them on the pump-plate with a piece of wet or oiled leather between; and the receivers, which are open a-top, have a brass cover set on them in the same manner. In these covers there are various perforations and contrivances for various purposes. The one in the figure has a slip wire passing through a collar of oiled leather, having a hook or a screw in its lower end for hanging any thing on or producing a variety of motions. Sometimes the receiver are set on another plate, which has a pipe screwed into its middle, furnished with a stop-cock and a screw, which fits the middle pipe *k*. When the rarefaction has been made in it, the cock is shut, and then the whole may be unscrewed from the pump, and removed to any convenient place. This is called a *transporter plate*.

The elasticity of the gage, *l l l l*, in the ordinary state of the air balances the pressure of the incumbent atmosphere. We find this from the force that is necessary to squeeze it into less bulk in opposition to its elasticity. Therefore the elasticity of the air increases with the vicinity of its particles. It is therefore reasonable to expect, that when we allow it to occupy more room, and its particles are farther asunder, its elasticity will be diminished though not annihilated; that is, it will no longer balance the whole pressure of the atmosphere, though it may still balance part of it. If therefore an upright pipe have its lower end immersed in a vessel of mercury, and communicate by its upper end with a vessel containing rarefied, therefore less elastic, air, we should expect that the pressure of the air will prevail, and force the mercury into the tube, and cause it to rise to such

an height that the weight of the mercury, joined to the elasticity of the rarefied air acting on its upper surface, shall be exactly equal to the whole pressure of the atmosphere. The height of the mercury is the exact measure of that part of the whole pressure which is not balanced by the elasticity of the rarefied air, and its deficiency from the height of the mercury in the Torricellian tube is the exact measure of this remaining elasticity.

It is evident, therefore, that the pipe will be a scale of the elasticity of the remaining air, and will indicate in some sort the degree of rarefaction: for there must be some analogy between the density of the air and its elasticity. After rarefying till the mercury in the gage has attained half the height of that in the Torricellian tube, shut the communication with the barrels and gage, and admit the water into the receiver. It will go in till all is again in equilibrio with the pressure of the atmosphere; that is, till the air in the receiver has collapsed into its natural bulk. This we can accurately measure, and compare with the whole capacity of the receiver; and thus obtain the precise degree of rarefaction corresponding to half the natural elasticity. We can do the same thing with the elasticity reduced to one third, one fourth, &c. and thus discover the whole law.

This gage must be considered as one of the most ingenious and convenient parts of Hawkebee's pump; and it is well disposed, being in a situation protected against accidents: but it necessarily increases greatly the size of the machine, and cannot be applied to the table pump, represented in fig. 9. When it is wanted here, a small plate is added behind, or between the barrels and receiver; and on this is set a small *tubulated receiver*, covering a common weather-glass tube.—This receiver being rarefied along with the other, the pressure on the mercury in the cistern, arising from the elasticity of the remaining air, is diminished so as to be no longer able to support the mercury at its full height; and it therefore descends till the height at which it stands puts it in equilibrio with the elasticity. In this form, therefore, the height of the mercury is directly a measure of the remaining elasticity; while in the other it measures the remaining unbalanced pressure of the atmosphere. But this gage is extremely cumbersome, and liable to accidents. We are seldom much interested in the rarefaction till it is great: a contracted form of this gage is therefore very useful, and was early used. A syphon ABCD (fig. 11.), each branch of which is about 4 inches long, close at A and open at D, is filled with boiling mercury till it occupies the branch AB and a very small part of CD, having its surface at O. This is fixed to a small stand, and fixed into the receiver, along with the things that are to be exhibited in the rarefied air. When the air has been rarefied till its remaining elasticity is not able to support the column BA, the mercury descends in AB, and rises in CD, and the remaining elasticity will always be measured by the elevation of the mercury in AB above that in the leg CD.

The barometer or syphon gage is a perfect indication and measure of the performance of an air-pump, and a pump is (*ceteris paribus*) so much

the more perfect, as it is able to raise the mercury higher in the gage. Thus we discover that none can produce a complete exhaustion, and that their operation is only a very great rarefaction: for none can raise the mercury to that height at which it stands in the Torricellian tube, well purged of air. Few pumps will bring it within $\frac{1}{16}$ of an inch. Hawkebee's, fitted up according to his instructions, will seldom bring it within $\frac{1}{8}$. Pumps with cocks, when constructed according to the principles of the exhausting syringe (See I.), and new and in fine order, will in favourable circumstances bring it within $\frac{1}{16}$. None with valves fitted up with wet leather, or when water or volatile fluids are allowed access into any part, will bring it nearer than $\frac{1}{8}$. Nay, a pump of the best kind, and in the finest order, will have its rarefying power reduced to the lowest standard, as measured by this gage, if we put into the receiver the tenth part of a square inch of white sheep-skin, fresh from the shops, or of any substance equally damp. This is a discovery made by means of the improved air-pump, and leads to very extensive and important consequences in general physics.

It would require a volume to describe all the changes which have been made on it. But our present purpose is to consider it merely as a machine for rarefying elastic or expansive fluids. All who used it perceived the limit set to the rarefaction by the resistance of the valves, and tried to perfect the construction of the cocks. The Abbe Nollet and Gravefande, two of the most eminent experimental philosophers in Europe, were the most successful.

Mr GRAVESANDE justly preferred Hooke's plan of a double pump, and contrived an apparatus for turning the cocks by the motion of the pump's handle. This is far from either being simple or easy in working; and occasions great jerks and concussions in the whole machine. His piston has no valve, and it has several other deficiencies, which render a particular description unnecessary. Yet its performance is highly extolled by him, as far exceeding his former pumps with valves. The same preference was given to it by his successor Muschenbroek. But, while they both prepared the pistons and valves and leathers of the pump, by steeping them in oil, and then in a mixture of water and spirit of wine, no just estimate could be made of its performance. For with this preparation it could not bring the gage within $\frac{1}{8}$ of an inch of the barometer; from its construction, a very considerable space is left between the piston and cock, not less than an inch, from which the air is never expelled; it soon lost any advantages it possessed when fresh from the workman's hands, by the cock growing loose and admitting air. It is surprising that Gravefande omitted Hawkebee's security against this, by placing the barrels in a dish filled with oil: which would effectually have prevented this inconvenience.

We must not omit a seemingly paradoxical observation of Gravefande, that in a pump constructed with valves, and worked with a determined uniform velocity, the required degree of rarefaction is sooner produced by short barrels than by long ones. This will easily be seen by an example.

ple. Suppose the long barrel to have equal capacity with the receiver, then at the end of the first stroke the air in the receiver will have $\frac{1}{2}$ its natural density. Now, let the short barrels have half this capacity: at the end of the first stroke the density of the air in the receiver is $\frac{1}{2}$, and at the end of the second stroke it is $\frac{1}{4}$, which is less than $\frac{1}{2}$, and the two strokes of the short barrel are supposed to be made in the same time with one of the longest, &c.

HAWKESBEE'S pump maintained its pre-eminence without rival in Britain, and generally too on the continent, except in France, where every thing took the *ton* of the Academy, till about 1750, when it engaged the attention of Mr John Smeaton, a person of uncommon knowledge, and second to none but Dr Hooke in mechanical resource. He was then a maker of philosophical instruments, and made many attempts to perfect the pumps with cocks, but found, that whatever perfection he could bring them to, he could not enable them to preserve it; and he never would sell one of this construction. He therefore attached himself solely to the *valve pumps*. The first thing was to diminish the resistance to the entry of the air from the receiver into the barrels: this he rendered almost nothing, by enlarging the surface on which this feeble elastic air was to press. Instead of making these valves to open by its pressure on a circle of $\frac{1}{8}$ of an inch in diameter, he made the valve-hole one inch in diameter, enlarging the surface 400 times; and, to prevent this piece of thin leather from being burst by the great pressure on it, when the piston in its descent was approaching the bottom of the barrel, he supported it by a delicate but strong grating, dividing the valve-hole like the section of a honey-comb, as represented in fig. 12; and the ribs of this grating are seen edge-wise in fig. 13. *a, b, c*.

The valve was a piece of thin membrane or oiled silk, gently strained over the mouth of the valve-hole, and tied on by a fine silk thread wound round it in the same manner that the narrow slips had been tied on formerly. This done, he cut with a pointed knife the leather round the edge, nearly four quadrantal arcs, leaving a small tongue between each, as in fig. 12. The strained valve immediately shrinks inwards, as represented by the shaded parts; and the strain by which it is kept down is now greatly diminished, taking place only at the corners. The gratings being reduced nearly to an edge (but not quite, lest they should cut), there is very little pressure to produce adhesion by the clammy oil. Thus it appears, that a very small elasticity of the air in the receiver will be sufficient to raise the valve; and Mr Smeaton found, that when it was not able to do this at first, when only about $\frac{1}{300}$ of the natural elasticity, it would do it after keeping the piston up 8 or 10 seconds, the air having been all the while undermining the valve, and gradually detaching it from the grating.

But he could not follow this method with the piston valve. There was not room round the rod for such an expanded valve; and it would have obliged him to have a great space below the valve, from which he could not expel the air by the de-

scant of the piston. His ingenuity hit on a way of increasing the expelling force through the common valve: he inclosed the rod of the piston in a collar of leather *L*, through which it moved freely without allowing any air to get past its sides. For greater security, the collar of leather was contained in a box terminating in a cup filled with oil. As this makes a material change in the principle of construction of the air-pump (and indeed of pneumatic engines in general), and as it has been adopted in all the subsequent attempts to improve them, it merits a particular consideration.

The piston itself consists of two pieces of brass fastened by screws from below. The uppermost, which is of one solid piece with the rod GH, (fig. 13.) is of a diameter somewhat less than the barrel; so that when they are screwed together, a piece of leather, soaked in a mixture of boiled oil and tallow, is put between them; and when the piston is thrust into the barrel from above, the leather comes up around the side of the piston, and fills the barrel, making the piston perfectly air-tight. The lower half of the piston projects upwards into the upper, which has a hollow *g b c g* to receive it. There is a small hole through the lower half at *a* to admit the air; and a hole *c d* in the upper half to let it through, and there is a slip of oiled silk strained across the hole *a* by way of valve, and there is room enough left at *b c* for this valve to rise a little when pressed from below. The rod GH passes through the piece of brass which forms the top of the barrel so as to move freely, but without any sensible shake: this top is formed into a hollow box, consisting of two pieces ECDF and CNOD, which screw together at CD. This box is filled with rings of oiled leather exactly fitted to its diameter, each having a hole in it for the rod to pass through. When the piece ECDF is screwed down, it compresses the leathers; squeezing them to the rod, so that no air can pass between them; and, to secure us against all ingress of air, the upper part is formed into a cup EF, which is kept filled with oil. The top of the barrel is also pierced with a hole LK, which rises above the flat surface NO, and has a slip of oiled silk tied over it to act as a valve; opening when pressed from below, but shutting when pressed from above.

The communication between the barrel and receiver is by the pipe ABPQ; and there goes from the hole K in the top of the barrel, a pipe KRST, which either communicates with the open air or with the receiver, by means of the cock at its extremity T. The conduit pipe ABPQ has also a cock at Q, by which it is made to communicate either with the receiver or with the open air. These channels of communication are variously conducted and terminated, according to the views of the maker: the sketch in this figure is sufficient for explaining the principle, and is suited to the general form of the pump, as it has been frequently made by Nairne and other artists in London. Let us now suppose the piston at the top of the barrel, and that it applies to it all over, and that the air in the barrel is very much rarefied; in the common pump the piston valve is pressed hard down by the atmosphere, and conti-

pues shut till the piston gets far down, condenses the air below it beyond its natural state, and enables it to force up the valves. But here, as soon as the piston quits the top of the barrel, it leaves a void behind it; for no air gets in round the piston rod, and the valve at K is shut by the pressure of the atmosphere. There is nothing now to oppose the elasticity of the air below but the stiffness of the valve *bc*; and thus the expelling (or rather the *liberating*) force is prodigiously increased.

The superiority of this construction will be best seen by an example. Suppose the stiffness of the valve equal to the weight of $\frac{1}{2}$ of an inch of mercury, when the barometer stands at 30 inches, and that the pump gage stands at 29.9; then, in an ordinary pump, the valve in the piston will not rise till the piston has got within the 300th part of the bottom of the barrel, and it will leave the valve hole filled with air of the ordinary density. But in this pump the valve will rise as soon as the piston quits the top of the barrel; and when it is quite down, the valve hole *a* will contain only the 300th part of the air which it would have contained in a pump of the ordinary form. Suppose further, that the barrel is of equal capacity with the receiver, and that both pumps are to badly constructed, that the space left below the piston is the 300th part of the barrel. In the common pump the piston valve will rise no more, and the rarefaction can be carried no farther, however delicate the barrel valve may be; but in this pump the next stroke will raise the gage to 29.95, and the piston valve will again rise as soon as the piston gets half way down the barrel. The limit to the rarefaction by this pump depends chiefly on the space contained in the hole LK; and in the space *bcd* of the piston. When the piston is brought up to the top, and applied close to it, those spaces remain filled with air of the ordinary density, which will expand as the piston descends, and thus will retard the opening of the piston valve. The rarefaction will stop when the elasticity of this small quantity of air, expanded so as to fill the whole barrel (by the descent of the piston to the bottom,) is just equal to the force requisite for opening the piston valve.

Another advantage attending this construction is, that in drawing up the piston, we are not resisted by the whole pressure of the air; because the air is rarefied above this piston as well as below it, and the piston is in precisely the same state of pressure as if connected with another piston in a double pump. The resistance to the ascent of the piston is the excess of the elasticity of the air above it over the elasticity of the air below: this, toward the end of the rarefaction, is very small, while the piston is near the bottom of the barrel, but gradually increases as the piston rises, and reduces the air above it into smaller dimensions, and becomes equal to the pressure of the atmosphere, when the air above the piston is of the common density. If we should raise the piston still farther, we must condense the air above it: but Mr Smeaton has here made an issue for the air by a small hole in the top of the barrel, covered with a delicate valve. This allows the air to escape, and shuts again as soon as the piston

begins to descend, leaving almost a perfect void behind it as before.

This pump may be changed in a moment from a rarefying to a condensing engine, by simply turning the cocks at Q and T. While T communicates with the open air and Q with the receiver, it is a *rarefying* engine or air-pump: but when T communicates with the receiver, and Q with the open air, it is a *condensing* engine.

Fig. 14. Plate 278. represents Mr SMEATON'S air-pump as made by Nairne. Upon a solid base or table are set up 3 pillars F, H, H: the pillar F supports the pump plate A; and the pillars H, H, support the front or head, containing a brass cog-wheel, which is turned by the handle B, and works in the rack C fastened to the upper end of the piston rod. The whole is still farther made steady by two pieces of brass *cb* and *ok*, which connect the pump-plate with the front, and have perforations communicating between the hole *a* in the middle of the plate and the barrel. DE is the barrel of the pump, firmly fixed to the table by screws through its upper board: *efdc* is a slender brass tube screwed to the bottom of the barrel, and to the under hole of the horizontal canal *cb*. In this canal there is a cock which opens a communication between the barrel and the receiver, when the key is in the position represented here: but when the key is at right angles with this position, this communication is cut off. If that side of the key which is here drawn next to the pump-plate be turned outward, the external air is admitted into the receiver; but if turned inwards, the air is admitted into the barrel. *gh* is another slender brass pipe, leading from the discharging valve at *g* to the horizontal canal *hk*, to the under side of which it is screwed fast. In this horizontal canal there is a cock *n* which opens a passage from the barrel to the receiver when the key is in the position here drawn; but opens a passage from the barrel to the external air when the key is turned outwards, and from the receiver to the external air when the key is turned inwards. This communication with the external air is not immediate, but through a sort of box *i*; the use of this box is to receive the oil which is discharged through the top valve *g*. In order to keep the pump tight, and in working order, it is proper sometimes to pour a table spoonful of olive oil into the hole *a* of the pump-plate, and then to work the pump. The oil goes along the conduit *bcdfe*, gets into the barrel and through the piston valve, when the piston is pressed to the bottom of the barrel, and is then drawn up, and forced through the discharging valve *g* along the pipe *gh*, the horizontal passage *bn*, and finally into the box *i*. This box has a small hole in its side near the top, through which the air escapes.

From the upper side of the canal *cb* there rises a slender pipe which bends outward and then turns downwards, and is joined to a small box, which cannot be seen in this view. From the bottom of this box proceeds downwards the gage-pipe of glass, which enters the cistern of mercury G fixed below. On the upper side of the other canal at *o* is seen a small fluid, having a short pipe of glass projecting horizontally from it, close by and

and parallel to the front piece of the pump, and reaching to the other canal. This pipe is close at the farther end, and has a small drop of mercury or oil in it at the end *o*. This serves as a gage in condensing, indicating the degree of condensation by the place of the drop: For this drop is forced along the pip., condensing the air before it in the same degree that it is condensed in the barrel and receiver.

In constructing this pump, Mr Smeaton introduced a method of joining together the different pipes and other pieces, which has great advantages over the usual manner of screwing them together with leather between, and which is now much used in hydraulic and pneumatic engines. The manner in which the exhauſing gage is joined to the horizontal duct *cb*, is this: The piece *hip*, in *fig. 15*, is the same with the little cylinder observable on the upper ſide of the horizontal canal *cd*, in *fig. 14*. The upper part *bi* is formed into an outside ſcrew, to fit the hollow ſcrew of the piece *deed*. The top of this laſt piece has a hole in its middle, giving an eaſy paſſage to the bent tube *cba*, ſo as to ſlip along it with freedom. To the end *c* of this bent tube is foldered a piece of braſs *cſg*, perforated in continuation of the tube, and having its end ground flat on the top of the piece *hip*, and alſo covered with a ſlip of thin leather ſtrained acroſs it and pierced with a hole in the middle. It is plain from this form, that if the ſurface *fg* be applied to the top of *bi*, and the cover *deed* be ſcrewed down on it, it will draw or preſs them together, ſo that no air can eſcape by the joint, and this without turning the whole tube *cba* round, as is neceſſary in the uſual way. This method is now adopted for joining together the conducting pipes of the machines for extinguiſhing fires, an operation which was extremely troubleſome before this improvement.

The conduit pipe *Eefc* (*fig. 14*.) is faſtened to the bottom of the barrel, and the diſcharging pipe *gb* to its top, in the ſame manner. But to return to the gage, *fig. 15*; the bent pipe *cba* enters the box *st* near one ſide, and obliquely, and the gage pipe *qr* is inſerted through its bottom towards the oppoſite ſide. The uſe of this box is to catch any drops of mercury which may ſometimes be daſhed up through the gage pipe by an accidental oſcillation. This, by going through the paſſages of the pump, would corrode them, and would act particularly on the joints, which are generally foldered with tin. When this happens to an air-pump, it muſt be cleaned with the moſt ſcrupulous attention, otherwiſe it will be quickly deſtroyed.

It is reckoned a very fine pump of the ordinary conſtruction which will rarefy 200 times, or raiſe the gage to 20⁸/₅, the barometer ſtanding at 30. But Mr Smeaton's pump, even after long uſing, raiſed it to 29⁹/₅, which is equivalent to rarefying 600 times. When in fine order, he found no bounds to its rarefaction, frequently raiſing the gage as high as the barometer; and he thought its performance ſo perfect, that the barometer-gage was not ſufficiently delicate for meaſuring the rarefaction. He therefore ſubſtituted the ſyphon gage already deſcribed, which he gives ſome reaſons for preferring; but even this he found not ſufficiently ſenſible.

He contrived another, which could be carried to any degree of ſenſibility. It conſiſted of a glaſs body *A* (*fig. 16*.) of a pear ſhape, and therefore called the *pear-gage*. This had a ſmall projecting orifice at *B*, and at the other end a tube *CD*, whole capacity was the 100th part of the capacity of the whole veſſel. This was ſuſpended at the ſlip wire of the receiver, and there was ſet below it a ſmall cup with mercury. When the pump was worked, the air in the pear-gage was rarefied along with the reſt. When the rarefaction was brought to the degree intended, the gage was let down till *B* reached the bottom of the mercury. The external air being now let in, the mercury was raiſed into the pear, and ſtood at ſome height *E* in the tube *CD*. The length of this tube being divided into 100 parts, and thoſe numbered from *D*, it is evident that $\frac{DE}{DB}$ will expreſs the degree

of rarefaction which had been produced when the gage was immerſed into the mercury: or if *DC* be one 100th of the whole capacity, and be divided into 100 parts by a ſcale annexed to it, each unit of the ſcale will be one 10,000th of the whole.

This ingenious contrivance has been the means of making ſome very curious and important diſcoveries, which engage the attention of philoſophers. By this gage Mr Smeaton found, that his pump frequently rarefied 1000, 10,000, nay 100,000 times. But though he in every inſtance ſaw the great ſuperiority of his pump above all others, he often found irregularities which he could not explain, and a want of correſpondence between the pear and the barometer-gages which puzzled him. The pear-gage frequently indicated a prodigious rarefaction, when the barometer-gage would not ſhow more than 600. Theſe phenomena excited the curioſity of philoſophers, who were making much uſe of the air-pump in their reſearches, and were deeply intereſted in every thing connected with the powers of elaſtic fluids. Mr Nairne, a moſt accurate philoſophical inſtrument-maker, made a variety of experiments to examine and compare Mr Smeaton's pump with thoſe of the uſual conſtruction. This rigorous compariſon diſcovered ſeveral circumſtances in the conſtitution of the atmopheric air, and its relation to other bodies, which are of the utmoſt importance in the operations of nature. We ſhall mention ſuch only as relate to the operation of the air-pump in extracting AIR from the receiver.

Mr NAIRNE diſcovered, that when a little water, or even a bit of paper damped with water, was expoſed under the receiver of Mr Smeaton's air-pump, when in the moſt perfect condition, raiſing the mercury in the barometer-gage to 29⁹/₅ he could not make it riſe above 29⁸/₈ if Fahrenheit's thermometer indicated the temperature 47°, nor above 29⁷/₇ if the thermometer ſtood at 55°; and that to bring the gage to this height and keep it there, the operation of the pump muſt be continued long after the water had diſappeared or the paper become perfectly dry. He found that a drop of ſpirits, or paper moiſtened with ſpirits, could not in theſe circumſtances allow the mercury in the gage to riſe to near that height; and

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that

that similar effects followed from admitting any volatile body whatever into the receiver, or any part of the apparatus. This showed him at once how improper the directions were which had been given by Guericke, Boyle, Gravelande, and others, for fitting up the air-pump for experiment, by soaking the leather in water, covering the joints with water, or in short, admitting water or any other volatile body near it.

He therefore took his pumps to pieces, cleared them of all moisture by heat, and then leathered them anew with leather soaked in a mixture of olive oil and tallow, from which he had expelled all the water it usually contains, by boiling it till the first frothing was over. When the pumps were fitted up in this manner, he uniformly found that Mr Smeaton's pump rarefied the gage to 29.95, and the best common pump to 29.87, the first of which he computed to indicate a rarefaction to 600, and the other to 230. But in this state he again found that a piece of damp paper, leather, wood, &c. in the receiver, reduced the performance as before. The most remarkable phenomenon was, that when he used the pear-gage with the pump cleared from all moisture, it indicated the same degree of rarefaction with the barometer-gage: but when he exposed a bit of paper moistened with spirits, and thus reduced the rarefaction of the pump to what he called 50, the barometer-gage standing at 29.4, the pear-gage indicated a rarefaction exceeding 100,000; in short, it was not measurable; and this phenomenon was almost constant. Whenever he exposed any substance susceptible of evaporation, he found the rarefaction indicated by the barometer-gage greatly reduced, while that indicated by the pear-gage was prodigiously increased; and both these effects were more remarkable as the subject was of easier evaporation, or the temperament of the air of the chamber was warmer.

This uniform result suggested the true cause. Water boils at the temperature 212, that is, it is then converted into a vapour which is permanently elastic while of that temperature, and its elasticity balances the pressure of the atmosphere. If this pressure be diminished by rarefying the air above it, a lower temperature will now allow it to be converted into elastic vapour, and keep it in that state. Water will boil in the receiver of an air-pump at the temperament 96, or even under it. Philosophers did not think of examining the state of the vapour in temperatures lower than what produced ebullition. But it now appears, that in much lower heats than this, the superficial water is converted into elastic vapour, which continues to exhale from it as long as the water lasts; and, supplying the place of air in the receiver, exerts the same elasticity, and hinders the mercury from rising in the gage, in the same manner as so much air of equal elasticity would have done.

When Mr Nairne was exhibiting these experiments to the Hon. Henry Cavendish in 1776, this gentleman informed him that it appeared from a series of experiments made by his father Lord Charles Cavendish, that when water is of the temperature 72°, it is converted into vapour un-

der any pressure less than $\frac{1}{4}$ of an inch of mercury, and at 41° it becomes vapour when the pressure is less than $\frac{1}{8}$ of an inch. Even mercury evaporates in this manner when all pressure is removed. A dewy appearance is frequently observed covering the inside of the tube of a barometer, where we usually suppose a vacuum. This dew, when viewed through a microscope, appears to be a set of detached globules of mercury, and upon inclining the tube so that the mercury may ascend along it, these globules will be all licked up, and the tube become clear. The dew which lined it was the vapour of the mercury condensed by the side of the tube; and it is never observed but when one side is exposed to a stream of cold air.

As to the vapour in the air pump receiver, as long as the water continues to yield it, we may continue to work the pump; and it will be continually abstracted by the barrels, and discharged in the form of water, because it collapses as soon as exposed to the external pressure. All this while the gage will not indicate any more rarefaction, because the thing immediately indicated by the barometer-gage is *diminished elasticity*, which does not happen here. When all the water which the temperature of the room can keep elastic has evaporated under a certain pressure, suppose $\frac{1}{2}$ an inch of mercury, the gage standing at 29.5, the vapour which now fills the receiver expands, and by its diminished elasticity the gage rises, and now some more water which had been attached to bodies by chemical or corpuscular attraction is detached, and a new supply continues to support the gage at a greater height; and this goes on continually till *almost* all has been abstracted; but there will remain some which no art can take away; for as it passes through the barrels, and gets between the piston and the top, it successively collapses into water during the ascent of the piston, and again expands into vapour when we push the piston down again. Whenever this happens there is an end of the rarefaction.

While this operation is going on, the air comes out along with the vapour; but we cannot say in what proportion. If it were always uniformly mixed with the vapour, it would diminish rapidly; but this does not appear to be the case. There is a certain period of rarefaction in which a transient cloudiness is perceived in the receiver. This is watery vapour formed at that degree of rarefaction, mingled with, but not dissolved in, or united with, the air, otherwise it would be transparent. A similar cloud will appear if damp air be admitted suddenly into an exhausted receiver. The vapour, which formed an uniform transparent mass with the air, is either suddenly expanded and thus detached from the other ingredient, or is suddenly let go by the air, which expands more than it does. Different compositions of air exhibit remarkable differences in this respect. But we see from this and other phenomena, that the air and vapour are not always intimately united; and therefore will not always be drawn out together by the air-pump. But let them be ever so confusedly blended, the air must come out along with the vapour, and its quantity remaining in the receiver must be prodigiously diminished by this association

association, probably, much more than could be, had the receiver only contained pure air.

As the air and vapour are continually drawn off from the receiver, the air in the pear-gage expands and goes off with it. We shall suppose that the generated vapour hinders the gage from rising beyond 29½. During the continued working of the pump, the air in the pear, whose elasticity is 0.5, slowly mixes with the vapour at the mouth of the pear, and the mixture even advances into its inside, so that if the pumping be long enough continued, what is in the pear is nearly of the same composition with what is in the receiver, consisting perhaps of 20 parts of vapour and one part of air, all of the elasticity of 0.5. When the pear is plunged into the mercury, and the external air allowed to get into the receiver, the mercury rises

in the pear-gage, and leaves not $\frac{1}{60}$, but $\frac{1}{60 \times 20}$

or $\frac{1}{1200}$, of it filled with common air, the vapour having collapsed into an invifible atom of water. Thus the pear-gage will indicate a rarefaction of 1200, while the barometer-gage only showed 60, that is, showed the elasticity of the included substance diminished 60 times. The conclusion to be drawn from these two measures (the one of the rarefaction of air, and the other of the diminution of elasticity) is, that the matter with which the receiver was filled, immediately before the readmission of the air, consisted of one part of incondensable air, and $\frac{1200}{60}$, or 20 parts of watery vapour,

The only obscure part of this account is what relates to the composition of the matter which filled the pear-gage, before the admission of the mercury. It is not easy to see how the vapour of the receiver comes in by a narrow mouth while the air is coming out by the same passage. Accordingly it requires a *very long time* to produce this extreme rarefaction in the pear-gage; and there are great irregularities in any two succeeding experiments, as may be seen by looking at Mr Nairne's account of them in *Philos. Transf.* Vol. LXVII. Some vapours appear to have mixed much more readily with the air than others; and there are some unaccountable cases where vitriolic acid and sulphureous bodies were included, in which the diminution of density indicated by the pear-gage was uniformly less than the diminution of elasticity indicated by the barometer-gage. It is enough for us to have established, by unquestionable facts, this production of elastic vapour, and the necessity of attending to it, both in the construction of the air-pump and in drawing results from experiments exhibited in it.

Mr Smeaton's pump, when in good order, and perfectly free from all moisture, will in dry weather rarefy air about 600 times, raising the barometer-gage to within $\frac{1}{10}$ th of an inch of a fine barometer. This was a performance so much superior to that of all others, and by means of Mr Nairne's experiments opened so new a field of observation, that the air-pump once more became a capital instrument among the experimental philosophers. The causes of its superiority were also so distinct, that artists were immediately excited to a farther improve-

ment of the machine; so that this becomes a new epoch in its history.

There is, however, one imperfection which Mr Smeaton has not attempted to remove. The discharging valve is still opened against the pressure of the atmosphere. Mr Smeaton, in his ingenious construction, has greatly diminished, but has not annihilated, the obstructions to the passage of the air from the receiver into the barrel. His success encouraged farther attempts. One, the first and most ingenious, was that of Professor Ruffel of the university of Edinburgh, who, about 1770, constructed a pump in which both cocks and valves were avoided. But the death of the ingenious author put a stop to the improvements by which he expected to have brought it to perfection; and we have heard of none who has since attempted to complete it.

In the 73d volume of the *Philos. Transf.* Mr TIBERIUS CAVALLIO has given the description of an air-pump contrived and executed by Messrs. Haas and Hurter, instrument-makers in London, where these artists have revived Guericke's method of opening the barrel-valve, during the last strokes of the pump, by a force acting from without. We shall only infer so much of this description as relates to this distinguishing circumstance. *Fig. 17.* represents a section of the bottom of the barrel, where AA is the barrel and BB the bottom, which has in its middle a hollow cylinder CCFF, projecting about half an inch into the barrel at CC, and extending a good way downwards to FF. The space between this projection and the sides of the barrel is filled up by a brass ring DD, over the top of which is strained a piece of oiled silk EE, which performs the office of a valve, covering the hole CC. But this hole is filled up by a piece of brass, or rather an assemblage of pieces screwed together, GGHIII. It consists of three projecting filets or shoulders GG, HH, II, which form two hollows between them, and which are filled with rings of oiled leather OO, PP, firmly screwed together. The extreme filets GG, II, are of equal diameter with the inside of the cylinder, so as to fill it exactly; and the whole, stuffed with oiled leather, slide up and down without allowing any air to pass. The middle fillet HH is not so broad, but thicker. In the upper fillet GG there is formed a shallow dish about $\frac{1}{4}$ th of an inch deep and $\frac{1}{4}$ th wide. This dish is covered with a thin plate, pierced with a grating like Mr Smeaton's valve-plate. There is a perforation VX along the axis of this piece, which has a passage out at one side H, through the middle fillet. Opposite to this passage, and in the side of the cylinder CCFF is a hole M, communicating with the conduit pipe MN, which leads to the receiver. Into the lower end of the perforation is screwed the pin KL, whose tail L passes through the cap FE. The tail L is connected with a lever RQ, moveable round the joint Q. This lever is pushed upwards by a spring; and thus the whole piece is kept in contact with the slip of oiled silk or valve EE.

Now, suppose a void formed in the barrel by drawing up the piston; the elasticity of the air in the receiver, in the pipe NM, and in the passage XV, will press on the great surface of the valve exposed through the grating, will raise it; and the pump

pump will perform precisely as Mr Smeaton's does. But suppose the rarefaction to have been so long continued, that the air is no longer able to raise the valve; this will be seen by the mercury rising no more in the pump-gage. When this is perceived, the operator must press with his foot on the end R of the lever RQ. This draws down the pin KL, and with it the whole hollow plug with its grated top. And thus, instead of raising the valve from its plate, the plate is here drawn down from the valve. The air now gets in without obstruction, and the rarefaction proceeds as long as the piston rises. When it is at the top of the barrel, the operator takes his foot from the lever, and the spring presses up the plug again and shuts the valve. The piston-rod passes through a collar of leather, as in Mr Smeaton's pump, and the air is finally discharged through an outward valve in the top of the barrel. This is an ingenious contrivance, similar to what was adapted by OVERICK himself; and we have no doubt of these pumps performing extremely well if carefully made; and it seems not difficult to keep the plug perfectly air-tight by supplying plenty of oil to the leathers. Mr Cavallo, in the *Philos. Trans.* 1783, says, that when it had been long used, it had, in some experiments, rarefied 600 times.

Aiming still at the removing the obstructions to the entry of the air from the receiver into the barrels, Mr Prince, an American, has constructed a pump in which there is no valve or cock whatever between them. In this pump the piston rod passes through a collar of leathers, and the air is finally discharged through a valve, as in the two last. But great inconveniencies were experienced from the oscillations of the mercury in the gage. As soon as the piston comes into the cistern, the air from the receiver immediately rushes into the barrel, and the mercury shoots up in the gage, and gets into a state of oscillation. The subsequent rise of the piston will frequently keep time with the second oscillation, and increase it. The descent of the piston produces a downward oscillation, by allowing the air below it to collapse; and, by improperly timing the strokes, this oscillation becomes so great as to make the mercury enter the pump. To prevent this, and a greater irregularity of working as a condenser, valves were put in the piston; but as these require force to open them, the addition seemed rather to increase the evil, by rendering the oscillations more simultaneous with the ordinary rate of working. Besides all this, it appears likewise of very difficult execution. It has many long, slender, and crooked passages, which must be drilled through broad plates of brass, some of them appearing scarcely practicable; so that it appears rather a suggestion of theory than a thing warranted by its actual performance.

Mr LAVOISIER and the naturalists who were occupied with him in the investigation of the different species of gas disengaged from bodies in chemical operations, contrived an air-pump which has great appearance of simplicity, and, being very different from all others, merits a description. It consists of two barrels *l, m*, fig. 18. with solid pistons *k, k*. The pump plate *ab* is pierced at its centre *c* with a hole which branches towards each

of the barrels, as represented by *cd, ce*. Between the plate and the barrels slides another plate *h, i*, pierced in the middle with a branched hole *fd, g*, and near the ends with two holes *bb, ii*, which go from its under side to the ends. The holes in these two plates are so adjusted, that when the plate *h, i* is drawn so far towards *h* that the hole *i* comes within the barrel *m*, the branch *df* of the hole in the middle plate coincides with the branch *cd* of the upper plate, and the holes *c, g* are shut. Thus a communication is established between the barrel *l* and the receiver on the pump-plate, and between the barrel *m* and the external air. In this situation the barrel *l* will exhaust, and *m* will discharge. When the piston of *l* is at its mouth, and that of *m* touches its bottom, the sliding plate is shifted over to the other side, so that *m* communicates with the receiver through the passage *gd, ec*, and *l* communicates with the air by the passages *cb, b*. This sliding plate performs the office of four cocks in a very beautiful and simple manner, and if the pistons apply close to the ends of the barrels, so as to expel the whole air, the pump will be perfect. It works, indeed, against the whole pressure of the external air. But this may be avoided by putting valves on the holes *b, i*; and these can do no harm, because the air remaining in them never gets back into the barrel till the piston be at the farther end, and the exhaustion of that stroke completed. But the best workmen of London think that it will be incomparably more difficult to execute this cock (for it is a cock of unusual form), in such a manner that it shall be air-tight and yet move with tolerable ease, and that it is much more liable to wearing loose than common cocks. It must, however, be acknowledged to be ingenious, and it may suggest to an intelligent artist a method of combining common conical cocks upon one axis so as to answer the same purposes much more effectually.

The last improvement which we shall describe is that published by Mr Cuthbertson, philosophical instrument-maker in Amsterdam. His pump has given such evidences of its perfection, that we can hardly expect or wish for any thing more complete. But the same construction was invented, and in part executed, before the end of 1779, by Dr DANIEL RUTHERFORD, professor of botany in the university of Edinburgh, who was then engaged in experiments on the production of air during the combustion of bodies in contact with nitre, and who was vastly desirous of procuring a more complete abstraction of pure aerial matter than could be effected by Mr Smeaton's pump. The Doctor's dissertation on this subject was read at that period, in the Philosophical Society of Edinburgh. In it the Doctor appeared fully apprised of the existence of pure vital air in the nitrous acid as its chief ingredient, and as the cause of its most remarkable phenomena, and to want but a step to the discoveries which have eternized the name of LAVOISIER. He was particularly anxious to obtain apart this distinguishing ingredient in its composition, and, for this purpose, to abstract completely from the vessel in which he subjected it to examination, every particle of elastic matter. Prof. Robison, proposed to him to cover the bottom of Mr Smeaton's piston, with some clammy matter, which should take hold of the bottom valve, and

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part it when the piston was drawn up. A few days after, Dr Rutherford showed him a drawing of a pump, having a conical metal valve in the bottom, furnished with a long slender wire, sliding in the inside of the piston-rod with a gentle friction, sufficient for lifting the valve, and secured against all chance of failure by a spring a-top, which took hold of a notch in the inside of the piston-rod about a quarter of an inch from the lower end, so as certainly to lift the valve during the last quarter of an inch of the piston's motion. Being an excellent mechanic, he had executed a valve on this principle, and was fully satisfied with its performance. But having already confirmed his doctrines respecting the nitrous acid by incontrovertible experiments, his wishes to improve the air-pump lost their incitement, and he thought no more of it; and not long after this, the ardour of the philosophers of the Teylerian Society at Haarlem and Amsterdam excited the efforts of Mr Cuthbertson, their instrument-maker, to the same purpose, and produced the most perfect air-pump that has yet appeared. The following description of it and its performance, is given in the inventor's own words:

SECT. III. Of Mr CUTHBERTSON'S AIR-PUMP.

FIG. 19, *plate CCLXXIX*, gives a perspective view of this pump, with its two principal gages screwed into their places. These need not be used together, except in cases where the utmost exactness is required. In common experiments one of them is removed, and a stop-screw put in its place. When the pear gage is used, a small round plate, on which the receiver may stand, must be first screwed into the hole at A; but this hole is stoppered on other occasions with a screw. When all the three gages are used, and the receiver is exhausted, the stop-screw B, at the bottom of the pump, must be unscrewed, to admit the air into the receiver; but when they are not all used, either of the other stop-screws will answer this purpose. Fig. 20 represents a cross-bar for preventing the barrels from being shaken by working the pump or by any accident. Its place in fig. 19 is represented by the dotted lines. It is confined in its place, and kept close down on the barrels by two slips of wood NN, which must be drawn out, as well as the screws OO, when the pump is to be taken asunder. The other figures exhibit a section of all the working parts of the pump, except the wheel and rack, in which there is nothing uncommon.

FIG. 21 is a section of one of the barrels, with all its internal parts; and figs. 22, 23, 24, and 25, are different parts of the piston, proportioned to the size of the barrel and to one another. The piston and barrel are 1'65 inches in diameter. In fig. 21. DD represents the barrel, F the collar of leathers, G a hollow cylindrical vessel to contain oil. R is also an oil-vessel to receive the oil which is drawn along with the air, through the hole *a a*, when the piston is drawn upwards; and, when this is full, the oil is carried over with the air, along the tube F, into the oil-vessel G. *c c* is a wire which is driven upwards from the hole *a a* by the passage of the air; and as soon as this has escaped, it falls down again by its own weight, shuts up the hole,

and prevents all return of the air into the barrel. At *d d* are fixed two pieces of brass, to keep the wire *c c* in a verticle direction, that it may accurately shut the hole. H is a cylindrical wire or rod which carries the piston I, and is made hollow to receive a long wire *g g*, which opens and shuts the hole L; and on the other end of the wire O is screwed a nut, which, by stopping in the narrowest part of the hole, prevents the wire from being driven up too far. This wire and screw are more clearly seen in fig. 22 and 26; they slide in a collar of leather *r r*, fig. 22 and 25 in the middle piece of the piston. Fig. 24 and 25 are the two mean parts which compose the piston, and, when the pieces 3 and 6 are added to it, the whole is represented by fig. 22. Fig. 25 is a piece of brass of a conical form, with a shoulder at the bottom. A long hollow screw is cut in it, about $\frac{2}{3}$ of its length, and the remainder of the hole, in which there is no screw, is of about the same diameter with the screwed part, except a thin plate at the end, which is of a width exactly equal to the thickness of *g g*. That part of the inside of the conical brass in which no thread is cut, is filled with oiled leathers with holes through which *g g* can slide stiffly. There is also a male screw with a hole in it, fitted to *g g* serving to compress the leathers *r r*. In fig. 24 *a a a a* is the outside of the piston, the inside of which is turned so as exactly to fit the outside of fig. 25; *b b* are round leathers about 60 in number; *c c* is a circular piece of brass of the size of the leathers, and *d d* is a screw serving to compress them. The screw at the end of fig. 23 is made to fit the screw in fig. 25. Now if fig. 26 be pushed into fig. 25, this into fig. 24, and fig. 23 be screwed into the end of fig. 25, these will compose the whole of the piston, as represented in fig. 22. H in fig. 21 represents the same part as H in fig. 22, and is that to which the rack is fixed. If, therefore, this be drawn upwards, it will cause fig. 25 to shut close into fig. 24, and drive out the air above it; and when it is pushed downward, it will open as far as the shoulder *a a* will permit, and suffer air to pass through. AA fig. 27, is the receiver plate, BB is a long square piece of brass, screwed into the under side of the plate, through which a hole is drilled corresponding to that in the centre of the receiver-plates and with three female screws *b, b, c*.

The rarefaction of the air in the receiver is effected thus:—Suppose the piston at the bottom of the barrel. The inside of the barrel, from the top of the piston to *a*, fig. 21, contains common air. When the rod is drawn up, the upper part of the piston sticks fast in the barrel till the conical part connected with the rod shuts the conical hole, and its shoulder applies close to its bottom. The piston is now shut, and therefore the whole is drawn up by the rack-work, driving the air before it through the hole *a a*, into the oil-vessel at R, and out into the room by the tube T. The piston will then be at the top of the barrel at *a*, and the wire *g g* will stand nearly as represented in the figure just raised from the hole L, and prevented from rising higher by the nut O. During this motion the air will expand in the receiver, and come along the bent tube *m* into the barrel. Thus the barrel will be filled with air, which, as the piston

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ton rifles, will be rarefied in proportion as the capacity of the receiver, pipes, and barrel is to the barrel alone. When the piston is moved down again by the rack-work, it will force the conical part, *fig. 25*, out of the hollow part *fig. 24* as far as the shoulders *a a*; *fig. 23* will rest on *a a fig. 24*, which will then be so far open as to permit the air to pass freely through it, while at the same time the end of *g g* is forced against the top of the hole, and shuts it, in order to prevent any air from returning into the receiver. Thus the piston, moving downwards, suffers the air to pass out between the sides of *fig. 24* and *25*: and, when it is at the bottom of the barrel, will have the column of air above it: and, consequently, when drawn upwards it will shut, and drive out this air, and, by opening the hole *L* at the same time, will give a free passage to more air from the receiver. This process being continued, the air of the receiver will be rarefied as far as its expansive power will permit. For in this machine there are no valves to be forced open by the elasticity of the air in the receiver, which at last it is unable to effect. There is therefore nothing to prevent the air from expanding to its utmost degree.

As the air must escape through the discharging passage *a c, fig. 21*, against the pressure of a column of oil and the weight of the wire, it may be supposed, that there will remain in this passage a quantity of air of considerable density, which will expand again into the barrel during the descent of the piston, and thus put a stop to the progress of rarefaction. This is the case in Mr Smeaton's pump, and all which have valves in the piston. But it is the peculiar excellency of this pump, that whatever be the density of the air remaining in *a c*, the rarefaction will still go on. In proof of this, suppose that the air contained in *a c*, is $\frac{1}{1000}$ part of the common air which would fill the barrel, and that the capacity of the barrel is equal to that of the receiver and passages, and that the air in the receiver and barrel is of the same density, the piston being at the bottom of the barrel: The barrel will therefore contain $\frac{1000}{1000}$ parts of its natural quantity, and the receiver $\frac{1}{1000}$. Now let the piston be drawn up. No air will be discharged at *a c*, because it will contain the whole air which was in the barrel, and which has now collapsed into its ordinary bulk. But this does not in the least hinder the air of the receiver from expanding into the barrel, and diffusing itself equally between both. Each will now contain $\frac{1000}{1000}$ of their ordinary quantity when the piston is at the top, and *a c* will contain $\frac{1}{1000}$ as before, or $\frac{1}{1000}$. Now push down the piston. The hole *L* is instantly shut, and the air in *a c* expands into the barrel, and the barrel now contains $\frac{1000}{1000}$. When the piston has reached the bottom, let it be again drawn up. There will be $\frac{1000}{1000}$ discharged through *c*, and the air in the receiver will again be equally distributed between it and the barrel.

Therefore the receiver will now contain $\frac{1}{1000}$.

When the piston reaches the bottom, there will be $\frac{1000}{1000}$ in the barrel. When again drawn up to

the top, there will be $\frac{1}{1000}$ discharged, and the re-

ceiver will contain $\frac{1}{1000}$; and when the piston reaches the bottom, there will be $\frac{1000}{1000}$. At the next stroke the receiver will contain only $\frac{0}{1000}$.

&c. &c.

Thus it appears, that notwithstanding the $\frac{1}{1000}$ which always expands back again out of the hole *a c* into the barrel, the rarity of the air in the receiver will be doubled at every stroke. There is therefore no need of a subsidiary air-pump at *c*, as in the American air-pump, and in the Swedish attempt to improve Smeaton's.

In using this air-pump no particular directions are necessary, nor is any peculiar care necessary for keeping it in order, except that the oil-vessel *A* be always kept about half full of oil. When the pump has stood long without being used, it will be proper to draw a table-spoonful of olive-oil through it, by pouring it into the hole in the middle of the receiver-plate, when the piston is at the bottom of the barrel. Then by working the piston, the oil will be drawn through all the parts of the pump, and the surplus will be driven through the tube *T* into the oil-vessel *G*. Near the top of the piston-rod at *H* there is a hole which lets some oil into the inside of the rod, which gets at the collar of leathers *r r*, and keeps the wire *g g* airtight.

When the pump is used for condensation at the same time that it rarefies, or separately, the piece containing the bent tube *T* must be removed, and *fig. 28*. put in its place, and fixed by its screws. *Fig. 28*. as drawn in the plate, is intended for a double barrelled pump. But for a single barrel only one piece is used, represented by *b a a*, the double piece being cut off at the dotted line *a a*. In this piece is a female screw to receive the end of a long brass tube, to which a bladder (if sufficient for the experiment of condensation), or a glass, properly secured for this purpose, must be screwed. Then the air which is subtracted from the receiver on the pump-plate will be forced into the bladder or glass. But if the pump be double, the apparatus, *fig. 28*. is used, and the long brass tube screwed on at *c*. *Fig. 29*. and *30*. represent the two gages, which will be sufficiently explained afterwards. *Fig. 29*. is screwed into *c b*, or into the screw at the other end of *c fig. 27*. and *fig. 30*. into the screw *a b, fig. 27*. If it be used as a single pump, either to rarefy or condense, the screw *K*, which fastens the rack to the piston-rod *H*, must be taken out. Then turning the winch till *H* is depressed as low as possible, the machine will be fitted to exhaust as a single pump; and if it be required to condense, the direction in paragraph 7th, SECT. I. must be observed with regard to the tube *T*, and *fig. 28*.

"I took (says Mr Cuthbertson) two barometer tubes of an equal bore with that fixed to the pump. These were filled with mercury four times boiled. They were then compared, and stood exactly at the same height. The mercury in one of them was boiled in it four times more, without making any change in their height; they were therefore judged very perfect. One of these was immersed

immersed in the cistern of the pump-gage, and fastened in a position parallel to it, and a sliding scale of one inch was attached to it. This scale, when the gage is used, must have its upper edge set equal with the surface of the mercury in the boiled tube after exhaustion, and the difference between the height of the mercury in this and in the other barometer tube may be observed to the one 100th of an inch; and being close together, no error arises from their not being exactly vertical, if they are only parallel. (See fig. 30. Pl. 280.) I used a 2d gage, which I shall call a double syphon. (See fig. 29. *ib.*) This was also prepared with the utmost care. I had a scale for measuring the difference between the height of the columns in the two legs. It was an inch long, and divided as the former, and kept in a truly vertical position by suspending it from a point with a weight hung to it, as represented in the figure. Upon comparing these two gages, I always found them to indicate the same degree of rarefaction. I also used a pear-gage, (fig. 16.) though the most imperfect of all, to repeat the curious experiments of Mr Nairne and others."

When experiments require the utmost rarefying power of the pump, the receiver must not be placed on leather, either oiled or soaked in water, as is usually done. The pump-plate and the edge of the receiver must be ground very flat and true, and this with very fine emery, that no roughness may remain. The plate of the pump must then be wiped very clean and very dry, and the receiver rubbed with a warm cloth till it become electrical. The receiver being now set on the plate, bog's ard, either alone or mixed with a little oil, which has been cleared of water by boiling, must be smeared round its outside edge. In this condition the pump will rarefy its utmost, and what still remains in the receiver will be permanent air. Or a little of this composition may be thinly smeared on the pump-plate; this will prevent all risk of scratching it with the edge of the receiver. Leather of very uniform thickness, long dried before a fire, and well soaked in this composition, which must be cleared of all water by the first boiling, will answer very well, and is expeditious, when receivers are to be frequently shifted. Other leathers should be at hand, soaked in a composition containing a little rosin. This gives it a clamminess which renders it impermeable to air, and is very proper at all joints of the pump, and all apparatus for pneumatic experiments. As it is impossible to render the pear-gage as dry as other parts of the apparatus, there will be generally some variation between this and the other gages.

When it is only intended to show the utmost power of the pump, without ascertaining the quantity of the residuum, the receiver may be set on wet leather. If, in this condition, the air be rarefied as far as possible, the syphon and barometer-gage will indicate a less degree of rarefaction than in the former experiments. But when the air is set in again, the pear-gage will point out a rarefaction some thousands of times greater than it did before. If the true quality of permanent air after exhaustion be required, the pear-gage will be nearest the truth: for when the air is rarefied to a certain degree, the moistened leather emits an expandible fluid, which, filling the receiver, forces out

the permanent air; and the two first gages indicate a degree of exhaustion which relates to the whole elastic matter remaining in the receiver, viz. to the expandible fluid together with the permanent air; whereas the pear-gage points out the degree of exhaustion, with relation to the permanent air alone, which remains in the receiver; for by the pressure of the air admitted into the receiver, the elastic vapour is reduced to its former bulk, which is imperceptible.

Many bodies emit this elastic fluid when the pressure of the air is much diminished: a piece of leather, in its ordinary damp state, about an inch square, or a bit of green or dry wood, will supply this for a great while. When such fluids have been generated in any experiments, the pump must be carefully cleared of them, for they remain not only in the receiver, but in the barrels and passages, and will again expand when the exhaustion has been carried far. The best method of clearing the pump is to take a very large receiver, and, to use every precaution to exhaust it as far as possible. Then the expandible matter lurking in the barrels and passes will be diffused through the receiver also, or will be carried off along with its air. It will be as much rarer than it was before, as the aggregate capacity of the receiver, barrels, and passes, is larger than that of the two last.

The performance of the pump may be estimated by the 4 following experiments. The two gages being screwed into their places, and the hole in the receiver-plate shut up, the pump was made to exhaust as far as it could. The mercury in the legs of the syphon was only one 40th of an inch out of the level, and that in the boiled barometer-tube one 40th of an inch higher than in the one screwed to the pump. A standard barometer then stood at 30 inches, and therefore the pump rarefied the permanent air 1200 times. This is twice as much as Mr Nairne found Mr Smeaton's do in its best state. Mr Cavallo seems disposed to give a favourable account of Haas and Hurter's pump, and it appears never to have exceeded 600 times. Mr Cuthbertson has often found the mercury within 100th of an inch of the level in the syphon-gage, indicating a rarefaction of 3000.

To one end of a glass tube, a inches diameter and 30 inches long, was fitted a brass cap and collar of leather, through which a wire was inserted, reaching about two inches within the tube. This was connected with the conductor of an electric machine. The other end was ground flat and set on the pump-plate. When the gages indicated a rarefaction of 300, the light became steady and uniform, of a pale colour, though a little tinged with purple; at 600 the light was of a pale dusky white; at 1200 it disappeared in the middle of the tube, and the tube conducted so well that the prime conductor only gave sparks so faint and short as to be scarcely perceptible. After taking off the tube, and making it as dry as possible, it was again connected with the conductor, which was giving sparks two inches long. When the air in it was rarefied ten times, the sparks were of the same length. Sometimes a pencil of light darted along the tube. When the rarefaction was 20 the spark did not exceed an inch, and light streamed the whole length of the tube.

tube. When the rarefaction was 30, the sparks were half an inch, and the light rushed along the tube in great streams. When the rarefaction was 100, the sparks were about $\frac{1}{4}$ long, and the light filled the tube in an uninterrupted body. When 300, the appearances were as before. When 600, the sparks were one 10th, and the light was of a faint white colour in the middle, but tinged with purple toward the ends. When 1200, the light was hardly perceptible in the middle, and was much fainter at the ends than before, but still ruddy. When 1400, which was the most the pump could produce, six inches in the middle of the tube were quite dark, and the ends free of any tinge of red, and the sparks did not exceed one 40th of an inch.

Although this noble instrument originated in Germany, all its improvements were made in this kingdom. Both the mechanical and pneumatical principles of Mr BOYLE'S pump were extremely different from the German, and in respect of expedition and conveniency, much superior. The double barrel and gage by HAWKESBEE were capital improvements, and on principle; and Mr SMEATON'S method of making the piston work in rarefied air made a complete change in the whole process.

By this machine, we can make experiments establishing and illustrating the gravity and elasticity of the air in a much more perspicuous manner than could be done by the spontaneous phenomena of nature. It enables us in the first place to show the materiality of air in a very distinct manner. Bodies cannot move about in the atmosphere without displacing it. This requires force; and the resistance of the air always diminishes the velocity of bodies moving in it. A heavy body therefore has the velocity of its fall diminished; and if the quantity of air displaced be very great, the diminution will be very considerable. This is the reason why light bodies, such as feathers, fall very slowly. Their moving force is very small, and can therefore displace a great quantity of air only with a very small velocity. But if the same body be dropped *in vacuo*, when there is no air to be displaced, it falls with the whole velocity competent to its gravity. A guinea and a downy feather, dropped at the same instant, by opening the forceps which holds them by means of the slipwire in the top of the receiver, will both reach the bottom at the same instant.

We can now abstract the air almost completely from a dry vessel, so as to know the precise weight of the air which filled it. The first experiment we have of this kind, done with accuracy, is that of Dr Hooke, Feb. 10. 1664, when he found 114 pints of air to weigh 944 grains. One pint of water was $3\frac{1}{2}$ oz. This gives for the specific gravity of air one 850th very nearly.

As we are thus immersed in a gravitating fluid, it follows, that every body preponderates only with the excess of its own weight above that of the air which it displaces; for every body loses by this immersion the weight of the displaced air. A cubic foot loses about 521 grains in frosty weather. We see balloons even rise in the air, as a piece of cork rises in water. A mass of water which really contains 850 lb. will

load the scale of a balance with 849 only, and will be balanced by about 849 $\frac{1}{2}$ lb. of brass. This is evinced by a very pretty experiment, represented in fig. 31. Pl. 279. A small beam is suspended within a receiver. To one end of the beam is appended a thin glass copper or ball, close in every part. This is balanced by a small piece of lead hung on the other arm. As the air is pumped out of the receiver, the ball will gradually preponderate, and will regain its equilibrium when the air is re-admitted.

Some philosophers propose, and actually use, a large globe of light make, suspended at a beam, for a barometer. If its capacity be a cubic foot, 17 $\frac{1}{2}$ grains will indicate the same change that is indicated by one 10th of an inch of an ordinary barometer. But a vessel of this size will load a balance too much to leave it sufficiently sensible to small changes of density. Besides, it is affected by heat and cold, and would require a very troublesome equation to correct their effects. It may be worth while to attend to this in buying and selling precious commodities; such as pearls, diamonds, silk, and some drugs. As they are generally sold by brass or leaden weights, the buyer will have some advantage when the air is heavy and the barometer high. On the other hand, he will have the advantage in buying gold and mercury when the air is light. The measuring of time by pendulums is also dependent on this pneumatical principle. As the accelerating force on a pendulum is not its whole weight, but the excess of its weight over that of the displaced air, it follows that a pendulum will vibrate more slowly in the air than *in vacuo*. A pendulum composed of lead, iron, and brass, may be about 8400 times heavier than the air which it displaces, when the barometer is at 30 inches and the thermometer at 32°, and the accelerating force will be diminished about one 16800th. This will cause a 2d pendulum to make about five vibrations less in a day than it would do *in vacuo*. Therefore to deduce the accelerative power of gravity from the length of a pendulum vibrating in the air, we must make an allowance of $6''$ 17, or seventeen 1000ths of a second, per day, for every inch that the barometer stands lower than 30 inches. But we must also note the temperature of the air; because when the air is warm it is less dense when supporting by its elasticity the same weight of atmosphere, and we must know how much its density is diminished by an increase of temperature. The correction is still more complicated; for the change of density affects the resistance of the air, and this affects the time of the vibration, by a law that is not yet well ascertained. As far as we can determine from any experiments yet made, the change arising from the altered resistance takes off about two fifths of the change produced by the altered density, and a second pendulum makes but three vibrations a-day more *in vacuo* than in the open air. This is a very unexpected result; but the experiments have neither been numerous nor very correctly made.

The air-pump also allows to show the effects of the pressure of the air in a great number of amusing and instructive phenomena. When the air is abstracted from the receiver, it is strongly pressed to

to the pump-plate by the incumbent atmosphere, and it supports this great pressure in consequence of its circular form. Being equally compressed on all sides, there is no place where it should give way sooner than another; but if it be thin, and not very round, which is sometimes the case, it will be crushed to pieces. If we take a square thin phial, and apply an exhausting syringe to its mouth, it will not fail being crushed.

As the operation of pumping is something like sucking, many of these phenomena are in common discourse ascribed to *suction*, a word much abused; and this abuse misleads the mind exceedingly in its contemplation of natural phenomena. Nothing is more usual than to speak of the suction of a syringe, the suction and draught of a chimney, &c. The following experiment puts the true cause of the strong adhesion of the receiver beyond a doubt.

Place a small receiver or cupping-glass on the pump-plate without covering the central hole, as in *fig. 32. pl. CCLXXVIII.* and cover it with a larger receiver. Exhaust the air from it; then admit it as suddenly as possible. The outer receiver, which after the rarefaction adhered strongly to the plate, is now loose, and the cupping-glass will be found sticking fast to it. While the rarefaction was going on, the air in the small receiver also expanded, escaped from it, and was abstracted by the pump. When the external air was suddenly admitted, it pressed on the small receiver, and forced it down to the plate, and thus shut up all entry. The small receiver must now adhere; and there can be no suction, for the pipe of the pump was on the outside of the cupping-glass.

To make this experiment succeed, the cupping glass should be pressed down by the hand on the greasy leather or plate; the glass will be so little raised by the expansion of its air during the pumping, that it will instantly clap close when the air is re-admitted. In like manner, if a thin glass phial be furnished with a valve, opening from within, but shutting when pressed from without, and if this phial be put under a receiver, and the air be abstracted from the receiver, the air in the phial will expand during the rarefaction, will escape through the valve, and be at last in a very rarefied state within the phial. If the air be now admitted into the receiver, it will press on the flat sides of the included phial and crush it to pieces. See *fig. 33, plate CCLXXVIII.*

If a piece of wet ox-bladder be laid over the top of a receiver whose orifice is about four inches wide, and the air be exhausted from within it, the incumbent atmosphere will press down the bladder into a hollow form, and then burst it inward with a prodigious noise. See *fig. 34.* Or if a piece of thin flat glass be laid over the receiver, with an oiled leather between them to make the juncture air-tight, the glass will be broken downwards. This must be done with caution, because the pieces of glass sometimes fly about with great force.

If there be formed two hemispherical cups of brass, with very flat thick brims, and one of them be fitted with a neck and stopcock, as represented by *fig. 35.* the air may be abstracted from them by screwing the neck into the hole in the pump-plate. To prevent the insinuation of air, a ring of oiled leather may be put between the rims.

Now unscrew the sphere from the pump, and fix hooks to each, and suspend them from a strong nail, and hang a scale to the lowest. It will require a considerable weight to separate them; namely, about 15 lb. for every square inch of the great circle of the sphere. If this be four inches diameter, it will require near 190 lb. This pretty experiment was first made by Otto Guericke, and on a very great scale. His sphere was of a large size, and, when exhausted, the hemispheres could not be drawn asunder by 20 horser. It was exhibited, along with many others equally curious and magnificent, to the Emperor of Germany and his court, at the breaking up of the diet of Ratibon in 1654.

If a loaded syringe be suspended by its piston from the hook in the top of the receiver, as in *fig. 36. N° 1. pl. CCLXXX.* and the air be abstracted by the pump, the syringe will gradually descend, and will at last drop off; as the elasticity of the air, which previously balanced the pressure of the atmosphere, is now diminished by its expansion, and is therefore no longer able to press the syringe to the piston. On admitting the air before this happens, the syringe will instantly rise again.

If a Torricellian tube be put under a tall receiver, as in *fig. 36. N° 2. pl. CCLXXX.* and the air be exhausted, the mercury in the tube will descend while that in the gage will rise; and the sum of their heights will always be the same; that is, equal to the height in an ordinary barometer. The height of the mercury in the receiver is the effect and measure of the remaining elasticity of the included air, and the height in the pump-gage is the unbalanced pressure of the atmosphere. This is a very instructive experiment, perfectly similar to Mr Auzout's, mentioned above, and completely establishes and illustrates the whole doctrine of atmospheric pressure.

We get a similar illustration and confirmation of the cause of the rise of water in pumps, by screwing a syringe into the top plate of a receiver, which syringe has a short glass pipe plunging into a small cup of water. See *fig. 37.* When the piston-rod is drawn up, the water rises in the glass pipe, as in any other pump. But if the air has been previously exhausted from the receiver, there is nothing to press on the water in the little jar; and it will not rise in the glass pipe, though the piston of the syringe be drawn to the top.

SECT. IV. Of Syphons.

THE rise of water in syphons is analogous to its rise and motion in pumps. Suppose a pipe ABCD, *fig. 38.* bent at right angles at B and C, and having its two ends immersed in the cisterns of water A and D. Let the leg CD be longer than the leg BA, and let the whole be full of water. The water is pressed upwards at A with a force equal to the weight of the column of air EA reaching to the top of the atmosphere; but it is pressed downwards by the weight of the column of water BA. The water at F is pressed downwards by the weight of the column CD, and upwards by the weight of the column of air FD reaching to the top of the atmosphere. The two columns of air may without any sensible error be considered as equal; therefore there is a superiority of pressure

X x x x z downwards

Downwards at D, and the water will flow out there. The pressure of the air will raise the water in the leg AB, and thus the stream will be kept up till the vessel A is emptied as low as the orifice of the leg BA, provided the height of AB is not greater than the pressure of the atmosphere can balance, that is, does not exceed 31 or 33 feet for water, 30 inches for mercury, &c.

A syphon then will always run from that vessel whose surface is highest; the form of the pipe is indifferent, because the hydrostatical pressures depend on the vertical height only. It must be filled with water by some other contrivance, such as a funnel or a pump applied a-top; and the funnel must be stopped up, otherwise the air would get in, and the water would fall in both legs. If the syphon have equal legs, as in *fig. 39.* and be turned up at the ends, it will remain full of water, and be ready for use. It need only be dipped into any vessel of water, and the water will then flow out at the other end of the syphon. This is called the *Wiertemberg syphon*, and is represented in *fig. 39. plate CCLXXIX.* See *SECT. XII.*

What is called the *SYPHON FOUNTAIN*, constructed on this principle, is shown in *fig. 40. pl. CCLXXX.* where AB is a tall receiver, standing in a wide basin DE, which is supported on the pedestal H by the hollow pillar FG. In the centre of the receiver is a jet pipe C, and in the top a ground stopper A. Near the base of the pillar is a cock N, and in the pedestal is another cock O.

Fill the basin DE with water within half an inch of the brim. Then pour in water at the top of the receiver (the cock N being shut) till it is about half full, and then put in the stopper. A little water will run out into the vessel DE. But before it runs over, open the cock N, and the water will run into the cistern H; and by the time that the pipe C appears above water, a jet will rise from it, and continue as long as water is supplied from the basin DE. The passage into the base cistern may be so tempered by the cock N that the water within the receiver shall keep at the same height, and what runs into the base may be received from the cock O into another vessel, and returned into DE, to keep up the stream.

This philosophical amusement may be constructed in the following manner. BB, *fig. 41. pl. CCLXXXI.* is the ferrule or cap into which the receiver is cemented. From its centre descends the jet pipe C, sloping outwards to give room for the discharging pipe *bd* of larger diameter, whose lower extremity *d* fits tightly into the top of the hollow pillar FG. The operation is easily understood. Suppose the distance from C to H, *fig. 40. plate CCLXXX.* 3 feet, which is about $\frac{1}{4}$ th of the height at which the atmosphere would support a column of water. The water poured into AB would descend through FG (the hole A being shut till the air has expanded $\frac{1}{4}$ th, and then it would stop. If the pipe C be now opened, the pressure of the air on the surface of the water in the cistern DE will cause it to spout through C to the height of 3 feet nearly, and the water will continue to descend through the pipe FG. By tempering the cock N so as to allow the water to pass through it as fast as it is supplied by the jet, the amusement may be continued a long time. It will stop at last,

however; for, as the jet is made into rarefied air, a little air will be extricated from the water, which will gradually accumulate in the receiver, and diminish its rarefaction, which is the moving cause of the jet. This indeed is an inconvenience felt in every employment of syphons, so much the more remarkably as their top is higher than the surface of the water in the cistern of supply.

Cases of this employment of a syphon are not unfrequent. When water collected at A (*fig. 42.*) is to be conducted in a pipe to C, situated in a lower part of the country, it sometimes happens, as between Lochend and Leith, that the intervening ground is higher than the fountain-head, as at B. A forcing pump is erected at A, and the water forced along the pipe. Once it runs out at C, the pump may be removed, and the water will continue to run on the syphon principle, provided BD do not exceed 33 feet. But the water in that part of the conduit which is above the horizontal plane AD, is in the same state as in a receiver of rarefied air, and gives out some of the air which is chemically united with it. This gradually accumulates in the elevated part of the conduit, and at last chokes it entirely. When this happens, the forcing pump must again be worked. Although the elevation in the Leith conduit is only about 8 or 10 feet, it will seldom run for 12 hours. This air cannot be discharged by the usual air-cocks; for if there were an opening at B, the air would rush in, and immediately stop the motion.

This combination of air with water is very distinctly seen by the air-pump. If a small glass containing cold water fresh from the spring be exposed, as in *fig. 43. plate CCLXXIX.* under the receiver, and the air rarefied, small bubbles will be observed to form on the inner surface of the glass, or on the surface of any body immersed in it, which will increase in size, and then detach themselves from the glass and reach the top; as the rarefaction advances, the whole water begins to show very minute air-bubbles rising to the top; and this appearance will continue for a very long time, till it be completely disengaged.

Water purged of air by boiling (or even without boiling) *in vacuo*, will again absorb air when exposed to the atmosphere. The best demonstration of this is to fill with this water a phial, leaving about the size of a pea not filled. Immerse this in a vessel of water, with the mouth undermost, by which means the air-bubble will mount up to the bottom of the phial. After some days standing in this condition, the air-bubble will be completely absorbed, and the vessel quite filled with water.

The air in this state of chemical solution has lost its elasticity, for the air is not more compressible than common water. It is also found that water brought up from a great depth under ground contains much more air than water at the surface. Indeed fountain waters differ exceedingly in this respect. The water which comes into the city of Edinburgh by pipes contains so much as to throw it into a considerable ebullition *in vacuo*. Other liquors contain much greater quantities of elastic fluid in this loosely combined state. A glass of beer treated in the same way will be almost wholly converted into froth by the escape of

of its fixed air, and will have lost entirely the prickling smartness which is so agreeable, and it become quite vapid.

SECT. V. Of the ELASTICITY, DENSITY, and COMPRESSIBILITY of the Air.

THE air-pump affords a great variety of experiments illustrative of the air's elasticity and expansibility. The very operation of exhaustion is an instance of its great, and hitherto unlimited expansibility. The following experiments show it clearly:

1st, Put a flaccid bladder, of which the neck is firmly tied with a thread, under a receiver, and work the pump. The bladder will gradually swell, and will even be fully distended. Upon re-admitting the air into the receiver, the bladder gradually collapses again into its former dimensions: while the bladder is flaccid, the air within it is of the same density and elasticity with the surrounding air, and its elasticity balances the pressure of the atmosphere. When part of the air of the receiver is abstracted, the remainder expands so as still to fill the receiver; but by expanding, its elasticity is plainly diminished; for we see by the fact, that the elasticity of the air of the receiver no longer balances the elasticity of that in the bladder, as it no longer keeps it in its dimensions. The air in the bladder expands also. It expands till its diminished elasticity is again in equilibrio with the diminished elasticity of the air in the receiver; that is, till its density is the same. When all the wrinkles of the bladder have disappeared, its air can expand no more, although we continue to diminish the elasticity of the air of the receiver by further rarefaction. The bladder now tends to burst; and if it be pierced by a point or knife fastened to the slip-wire, the air will rush out, and the mercury descend rapidly in the gage.

Every one must have observed a cavity at the big end of an egg between the shell and the white. The white and yoke are contained in a thin membrane or bladder which adheres loosely to the shell, but is detached from it at that part; and this cavity increases by keeping the egg in a dry place. One may form a judgment of its size, and therefore of the freshness of the egg, by touching it with the tongue; for the shell, where it is not in contact with the contents, will presently feel warm, being quickly heated by the tongue, while the rest of the egg will feel cold. If a hole be made in the opposite end of the egg, and if it be set on a little tripod, and put under a receiver, the expansion of the air in the cavity of the egg will force the contents through the hole till the egg be quite emptied: or, if nearly one half of the egg be taken away at the other end, the white and yolk taken out, the shell put under a receiver, and the air abstracted, the air in the cavity of the egg will expand, gradually detaching the membrane from the shell, till it causes it to swell out, and gives the whole the appearance of an entire egg.—In like manner shrivelled apples and other fruits will swell in vacuo by the expansion of the air confined in their cavities.

THE AIR-BLADDER of a fish is surrounded by circular and longitudinal muscles, by which the fish can compress the air still further; and, by ceasing to act with them, allow it to swell out

again. It is in this manner that the fish can suit its specific gravity to its situation in the water, so as to have no tendency either to rise or sink: but if the fish be put into the receiver of the air-pump, the rarefaction of the air obliges the fish to act more strongly with these contracting muscles, in order to adjust its specific gravity; and if too much air has been abstracted from the receiver, the fish is no longer able to keep its air-bladder in the proper degree of compression. It becomes therefore too buoyant, and comes to the top of the water, and is obliged to struggle with its tail and fins to get down; often in vain. The air-bladder sometimes bursts, and the fish goes to the bottom, as it can no longer keep above without the continual action of its tail and fins.

The play-things called *Cartesian devils* are similar to this. They are hollow glass figures, having a small aperture in the lower part of the figures, as at the point of the foot; their weight is adjusted so that they swim upright in water. When put into a tall jar filled to the top, and having a piece of leather tied over it, they will sink in the water, by pressing on the leather with the ball of the hand: this, by compressing the water, forces some of it to enter into the figure and makes it heavier than the water, for which reason it sinks, but rises again on removing the pressure of the hand.

If a half-blown ox bladder be put into a box, and great weights laid on it, and the whole put under a receiver, and the air abstracted; the air will, by expanding, lift up the weights, though above 100 lb. By such experiments, the great expansibility of the air is abundantly illustrated, as its compressibility was by the condensing syringe. The two sets of experiments form an uninterrupted chain; and there is no particular state of the air's density where the compressibility and expansibility is remarkably dissimilar. Air in its ordinary state expands; because its ordinary state is a state of compression by the weight of the atmosphere. It has been supposed that if there were a pit 33 miles deep, the air at the bottom will be as dense as water; if it were 50 miles deep, it would be as dense as gold; if it did not become a liquid before this depth; nay, that if a bottle with its mouth undermost were immersed six miles under water, it would be as dense as water. But the truth of these suppositions depends on the nature of its compressibility.

This is the circumstance of its constitution, which is evidently of the utmost importance. The great COMPRESSIBILITY and permanent FLUIDITY of air, observed in a vast variety of phenomena, is totally inexplicable, on the supposition that the particles of air are like so many balls of sponge or so many foot-balls. Give to these what compressibility you please, common air could no more be fluid than a mass of clay; it could no more be fluid than a mass of such balls pressed into a box. It can be demonstrated, that before a parcel of such balls, just touching each other, can be squeezed into half their present dimensions, their globular shape will be entirely gone, and each will have become a perfect cube, touching six other cubes with its whole surface; and these cubes will be strongly compressed together, so that motion could never be performed through among them by any

any solid body without a very great force: Whereas we know that air in its most compressed state is just as permeable to any body as the common air that we breathe. There is no way in which we can represent this fluidity to our imagination but by conceiving air to consist of particles, not only discrete, but distant from each other, and actuated by repulsive forces, or something analogous to them. It is an idle subterfuge, to which some naturalists have recourse, saying, that they are kept asunder by an intervening ether. (See OPTICS, § 153, 154.) We must, according to the rules of just reasoning, begin the inquiry here; determine from the phenomena what is the analogy between the distances of the particles and the repulsive forces exerted at these distances, proceeding in the same way as in the examination of planetary gravitation. We shall learn the analogy by attending to the analogy between the compressing force and the density. The density depends on the distance between the particles; the nearer they are to each other, the denser is the air. Suppose a square pipe one inch wide and 8 long, shut at one end, and filled with common air; then suppose a plug so nicely fitted to this pipe that no air can pass by its sides; suppose this piston thrust down to within an inch of the bottom: it is evident that the air which formerly filled the whole pipe now occupies the space of one cubic inch, which contains the same number of particles as were formerly diffused over 8 cubic inches.

The condensation would have been the same, if the air which fills a cube whose side is two inches had been squeezed into a cube of one inch, for the cube of two inches also contains 8 inches. In this case it is evident, that the distance between the particles would be reduced to its half in every direction. If a cube whose side is 3 inches, and which therefore contains 27 inches, be squeezed into one inch, the distance of the particles will be one 3d of what it was: in general the distance of the particles will be as the cube-root of the space into which they are compressed. If the space be $\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{5}, \frac{1}{6},$ &c. of its former dimensions, the distance of the particles will be $\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{5}, \frac{1}{6},$ &c. Now the term *density*, in its strict sense, expresses the vicinity of the particles. The measure of this vicinity therefore is the true measure of the density; and when 27 inches of air are compressed into one, we should say that it is three times as dense; but we say, that it is 27 times denser.

DENSITY is therefore, used in a sense different from its common acceptation: it expresses the comparative number of equidistant particles contained in the same bulk. This is also sufficiently precise, when we compare bodies of the same kind differing in density only; but we also say, that gold is 19 times denser than water, because the same bulk of it is 19 times heavier. This assertion proceeds on the assumption, that every ultimate atom of terrestrial matter is equally heavy. In such a case, the term *density* has little or no reference to the vicinity of the particles; and is only a term of comparison of other qualities. But when we speak of the respective densities of the same substance in its different states of compress-

ion, the word *density* is strictly connected with vicinity of particles, and we may safely take either of the measures. We shall abide by the common acceptation, and call that air 8 times as dense which has 8 times as many particles in the same bulk, although the particles are only twice as near to each other.

Thus by observing the analogy between the compressing force and the density, we shall discover the analogy between the compressing force and the distance of the particles. The force which is necessary for compressing two particles of air to a certain vicinity is a proper measure of the elasticity of the particles corresponding to that vicinity or distance; for it balances it, and forces which balance must be esteemed equal. ELASTICITY is a distinctive name for that corporeal force which keeps the particles at that distance: therefore observations made on the analogy between the compressing force and the density of air will give us the law of its corporeal force, as observations on the simultaneous deflections of the planets towards the sun give us the law of celestial gravitation.

But the sensible compressing forces which we are able to apply is at once exerted on unknown thousands of particles, while it is the law of action of a single particle that we want to discover. We must therefore know the *proportion* of the numbers of particles on which the compressing force is exerted. As the distance of the particles is as the cube root of the density inversely, the number of particles in physical contact with the compressing surface must be as the square of this root. Thus when a cube of 8 inches is compressed into one inch, and the particles are twice as near each other as they were before, there must be 4 times the number of particles in contact with each of the sides of this cubical inch; or, when we have pushed down the square piston of the pipe spoken of above to within an inch of the bottom, there will be 4 times the number of particles immediately contiguous to the piston, and resisting the compression; and to obtain the force really exerted on one particle, and the elasticity of that particle, we must divide the whole compressing force by 4. In like manner, if we have compressed air into $\frac{1}{27}$ of its former bulk, and brought the particles to $\frac{1}{3}$ of their former distance, we must divide the compressing force by 9. In general if d express the density,

$\frac{1}{\sqrt[3]{d}}$ will express the distance x of the particles;

$\sqrt[2]{d}$, or $d^{\frac{2}{3}}$, will express the vicinity or real density;

and $d^{\frac{2}{3}}$ will express the number of particles acting on the compressing surface; and if f express the accumulated external compressing

force, $\frac{f}{d^{\frac{2}{3}}}$ will express the force acting on one particle;

and therefore the elasticity of that particle corresponding to the distance x .

The first experiments made to establish the law of compression were published by Mr BOYLE, in 1661, in his *Defensio Doctrinae de Aeris Elasticitate contra Linum*, and exhibited before the Royal Society the year before. MARJORIE made experiments of the same kind, published in his *Essai sur*

la Nature de l'Air, and Traité des Mouvements des Eaux. The most copious experiments are those by SULZER, (*Mém. Berlin.* ix.) by FONTANA, (*Opusc. Physico-Math.*) and by SIR GEORGE SHUCK-BOURGH and GEN. ROY.

To examine the compressibility of the air that is not rarer than the atmosphere at the surface of the earth, we employ a bent tube or syphon ABCD, *pl.* 281. *fig.* 44., hermetically sealed at A and open at D: The short leg AB must be very accurately divided in the proportion of its solid contents, and fitted with a scale whose units denote equal increments, not of length, but of capacity. There are various ways of doing this; but it requires the most scrupulous attention, and without this the experiments are of no value. In particular the arched form at A must be noticed. A small quantity of mercury must then be poured into the tube, and passed backwards and forwards till it stands (the tube being held in a vertical position) on a level at B and C. Then we are certain, that the included air is of the same density with that of the contiguous atmosphere. Mercury is now poured into the leg DC, which will fill it, suppose to G, and will compress the air into a smaller space AE. Draw the horizontal line EF: the new bulk of the compressed air is evidently AE, measured by the adjacent scale, and the addition made to the compressing force of the atmosphere is the weight of the column GF. Produce GF downwards to H, till FH is equal to the height shown by a Torricellian tube filled with the same mercury; then the whole compressing force is HG. This is evidently the measure of the elasticity of the compressed air in AE, for it balances it. Now pour in more mercury, and let it rise to g, compressing the air into A*e*. Draw the horizontal line *e**f*, and make *f**h* equal to FH; then A*e* will be the new bulk of the compressed air, $\frac{AB}{Ae}$ will be its new density,

and *h* *g* will be the measure of the new elasticity. This operation may be extended as far as we please, by lengthening the tube CD, and taking care that it be strong enough to resist the great pressure. Great care must be taken to keep the whole in a constant temperature, because the elasticity of air is greatly affected by heat, and the change by any increase of temperature is different according to its density or compression.

The experiments of Boyle, Mariotte, Amontons, and others, were not extended to very great compressions, the density of the air not having been quadrupled in any of them; nor do they seem to have been made with very great nicety. It may be collected from them in general, that the elasticity of the air is very nearly proportioned to its density; and accordingly this law was almost immediately acquiesced in, and was called the *Boylean law*: it is accordingly assumed by almost all writers on the subject as exact. Of late years, however, there occurred questions in which it was of importance that this point should be more scrupulously settled, and the former experiments were repeated and extended. Sulzer and Fontana have carried them farther than any other.

Sulzer compressed air into $\frac{1}{4}$ of its former dimensions.

In these experiments, it is extremely difficult to preserve the temperature of the apparatus, particularly of the leg AB, which is most handled. A great quantity of mercury must be employed; and it does not appear that philosophers have been careful to have it precisely similar to that in the barometer, which gives the unit of compressing force and of elasticity. The mercury in the barometer should be pure and boiled. If the mercury in the syphon is adulterated with bismuth and tin, which it commonly is to a considerable degree, the compressing force, and consequently the elasticity, will appear greater than the truth. If the barometer has not been nicely fitted, it will be lower than it should be, and the compressing force will appear too great, because the unit is too small; and this error will be most remarkable in the smaller compressions.

The greatest source of error and irregularity in the experiments is the very heterogeneous nature of the air itself. Air is a solvent of all fluids, all vapours, and perhaps of many solid bodies. It is highly improbable that the different compounds shall have the same elasticity, or even the same law of elasticity; and it is well known, that air, loaded with water or other volatile bodies, is much more expandible by heat than pure air; nay, it would appear from many experiments, that certain determinate changes both of density and of temperature, cause air to let go the vapours which it holds in solution. Cold causes it to precipitate water, as appears in dew; so does rarefaction, as is seen in the receiver of an air-pump. In general, the elasticity of air does not increase quite so fast as its density. This will be best seen by the following tables, calculated from the experiments of Mr SULZER. The column E, in each set of experiments, expresses the length of the column GH, the unit being FH, while the column D expresses $\frac{AB}{Ae}$.

1st Set.		2d Set.		3d Set.	
D	E	D	E	D	E
1,000	1,000	1,000	1,000	1,000	1,000
1,100	1,093	1,236	1,224	1,091	1,076
1,222	1,211	1,294	1,288	1,200	1,183
1,375	1,284	1,375	1,332	1,333	1,303
1,571	1,559	1,466	1,417	1,500	1,472
1,692	1,669	1,571	1,515	1,714	1,659
1,833	1,796	1,692	1,647		
2,000	1,958	2,000	1,964	2,000	1,900
2,288	2,130				
2,444	2,375	2,444	2,392	2,400	2,241
3,143	2,936	3,143	3,078	3,000	2,793
3,666	3,391	3,666	3,775		
4,000	3,706			4,000	3,631
4,444	4,035	4,444	4,320		
4,888	4,438				
5,500	4,922	5,500	5,096		
5,882	5,552			6,000	5,297
		7,333	6,694	8,000	6,825

There

There appears in these experiments sufficient grounds for calling in question the *BOYLEAN LAW*. Professor Robison repeated them with some precautions, which probably had not been attended to by Mr Sulzer. He was particularly anxious to have the air as free as possible from moisture. For this purpose, having detached the short leg of the syphon, which was 34 inches long, he boiled mercury in it, and filled it with mercury boiling hot. He took a tin-plate vessel of sufficient capacity, and put into it a quantity of powdered quicklime just taken from the kiln; and having closed the mouth, he agitated the lime through the air in the vessel, and allowed it to remain there all night. He then emptied the mercury out of the syphon into the vessel, keeping the open end far within it. The short leg of the syphon was thus filled with very dry air. The other part was now joined, and boiled mercury put into the bend of the syphon; and the experiment was then prosecuted with mercury which had been recently boiled, and was the same with which the barometer had been carefully filled. The results of the experiments are expressed in the following table:

Dry Air.		Moist Air.		Camp. Air.	
D	E	D	E	D	E
1,000	1,000	1,000	1,000	1,000	1,000
2,000	1,957	2,000	1,920	2,000	1,909
3,000	2,848	3,000	2,839	3,000	2,845
4,000	3,737	4,000	3,726	4,000	3,718
5,500	4,930	5,500	5,000	5,500	5,104
6,000	5,242	6,000	5,452	6,000	5,463
7,620	6,490	7,620	6,775	7,620	6,812

Here it appears again in the clearest manner that the elasticities do not increase as fast as the densities, and the differences are even greater than in Mr Sulzer's experiments.

The 2d table contains the results of experiments made on very damp air in a warm summer's morning. In these it appears that the elasticities are almost precisely proportional to the $\frac{1}{2}$ a small constant quantity, nearly 0.11 deviating from this rule chiefly between the densities 1 and 1.5, within which limits we have very nearly $D = E^{1.1007}$. As this air is nearer to the constitution of atmospheric air than the former, this rule may be safely followed in cases where atmospheric air is concerned, as in measuring the depths of pits by the barometer.

The 3d table shows the compressions and elasticity of air strongly impregnated with the vapours of camphire. Here the Boylean law appears pretty exact, or rather the elasticity seems to increase a little faster than the density. Dr Hooke examined the compression of air by immersing a bottle to great depths in the sea, and weighing the water which got into it without any escape of air. But this method was liable to great uncertainty, on account of the unknown temperature of the sea at great depths.

Hitherto we have considered only such air as is not rarer than what we breathe; we must take a very different method for examining the elasticity of rarefied air. Let $g b$ (fig. 45.) be a long tube formed a top into a cup, and of sufficient diame-

ter to receive another smaller tube $a f$, open at first at both ends. Let the outer tube and cup be filled with mercury, which will rise in the inner tube to the same level. Let $a f$ now be stopped at a . It contains air of the same density and elasticity with the adjoining atmosphere. Note exactly the space $a b$ which it occupies. Draw it up into the position of fig. 46. and let the mercury stand in it at the height $d e$, while $c e$ is the height of the mercury in the barometer. It is evident that the column $d e$ is in equilibrio between the pressure of the atmosphere and the elasticity of the air included in the space $a d$. And since the weight of $c e$ would be in equilibrio with the whole pressure of the atmosphere, the weight of $c d$ is equivalent to the elasticity of the included air. While therefore $c e$ is the measure of the elasticity of the surrounding atmosphere, $c d$ will be the measure of the elasticity of the included air; and since the air originally occupied the space $a b$, and has now

expanded into $a d$, we have $\frac{a b}{a d}$ for the measure of its density. N.B. $c e$ and $c d$ are measured by the perpendicular heights of the columns, but $a b$ and $a d$ must be measured by their solid capacities. By raising the inner tube still higher, the mercury will also rise higher, and the included air will expand still farther, and we obtain another $c d$ and another $\frac{a b}{a d}$; and in this manner the relation between the density and elasticity of rarefied air may be discovered.

This examination may be managed more easily by the air-pump. Suppose a tube $a e$ (fig. 47.) containing a small quantity of air $a b$, set up in a cistern of mercury, which is supported in the tube at the height $c o$, and let $c e$ be the height of the mercury in the barometer. Let this apparatus be set under a tubulated receiver on the pump-plate, and let $g n$ be the pump-gage, and $m n$ be made equal to $c e$.

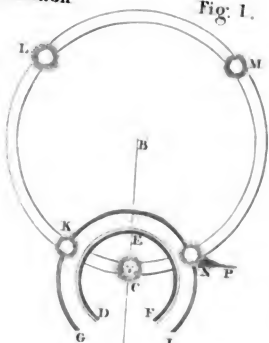
Then $c b$ is the measure of the elasticity of the air in $a b$, corresponding to the bulk $a b$. Now let some air be abstracted from the receiver. The elasticity of the remainder will be diminished by its expansion; and therefore the mercury in the tube $a e$ will descend to some point d . For the same reason the mercury in the gage will rise to some point o , and $m o$ will express the elasticity of the air in the receiver. This would support the mercury in the tube $a e$ at the height $e r$, if the space $a r$ were entirely void of air. Therefore $r d$ is the effect and measure of the elasticity of the included air when it has expanded to the bulk $a d$; and thus its elasticity, under a variety of other bulks, may be compared with its elasticity when of the bulk $a b$. When the air has been so far abstracted from the receiver that the mercury in $a e$ descends to e , then $m o$ will be the precise measure of its elasticity. In all these cases it is necessary to compare its bulk $a b$ with its natural bulk, in which its elasticity balances the pressure of the atmosphere. This may be done by laying the tube $a e$ horizontally, and then the air will collapse into its ordinary bulk.

Concluded in Vol. Eighteenth.

END OF THE SEVENTEENTH VOLUME.

Parhelion

Fig. 1.



Furnace for Pastes.

Fig. 4.



Fig. 3.

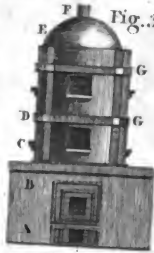


Fig. 1.



Fig. 2.

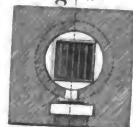


Fig. 2.



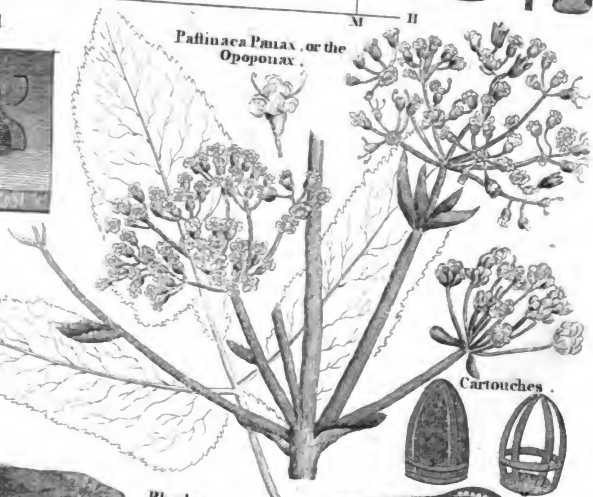
Pine Apple Shot.



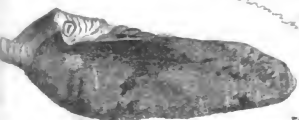
A Petard



Pastinaca Patau, or the Oporonax.



PROJECTILES
Cartouch



Pholas.



Cartouches.



Fig 1.

PATELLA.

Fig. 3.

Fig 2.

Fig. 5.

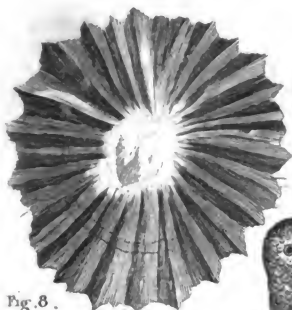


Fig. 4.

Fig. 7.



Fig. 8.

Fig 6.



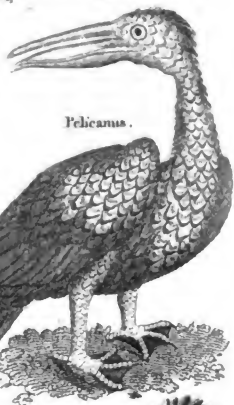
Fig. 9.



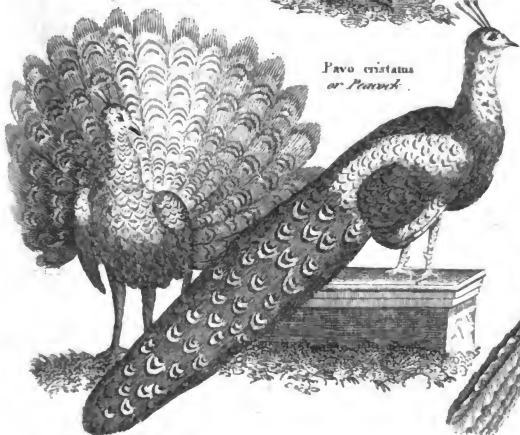
Psittacus Guineensis.



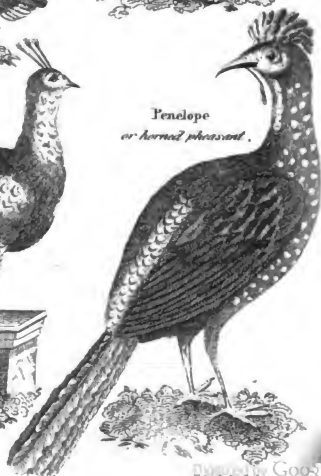
Psittacus Tullarius.



Pelicanus.



Pavo cristatus
or *Peacock.*



Penelepe
or *horned pheasant.*

The Geometrical Pen.

Fountain Pen.

Fig. 1.

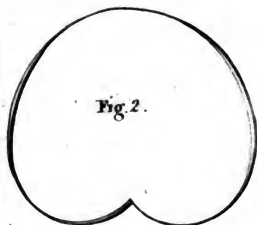
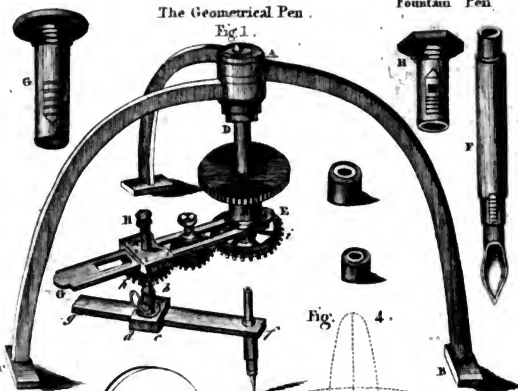


Fig. 2.

Fig. 4.

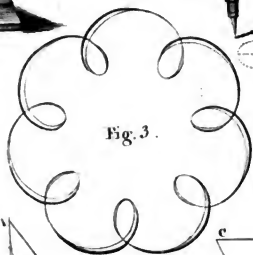
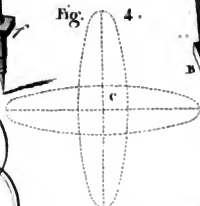


Fig. 3.

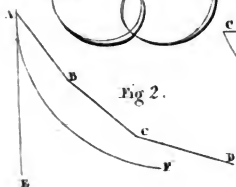


Fig. 2.

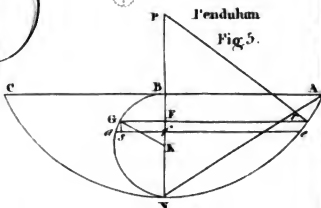


Fig. 5.

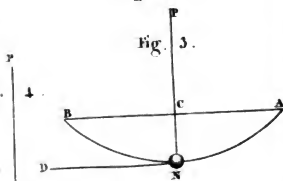


Fig. 3.

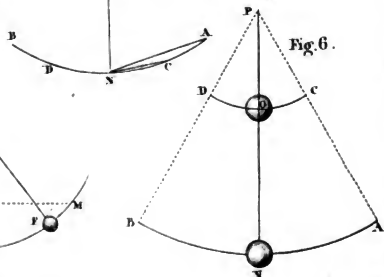


Fig. 6.

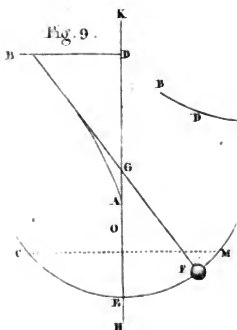


Fig. 9.

PENDULUM

Fig. 8.

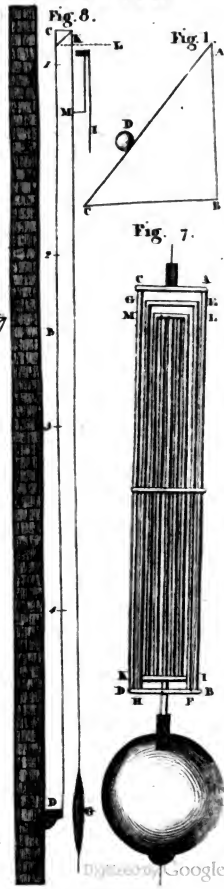


Fig. 1.

Fig. 7.



Petrified animal bodies.

Fig. 10.



Fig. 9.



Protractor

Fig. 1.



Pennatula

Fig. 1.



Fig. 2.



Fig. 6.



Fig. 3.



Fig. 5.



Fig. 7.



Fig. 8.



Fig. 4.



Peppermint Tree

Fig. 11.



Fig. 13.



Fig. 12.



Fig. 14.



Pteropus

Crepitans

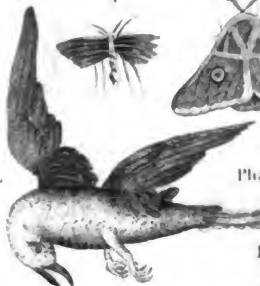
Fig. 2

Fig. 1

Fig. 4

Fig. 5

Projectiles
Fig. 12.



Phaeton

Phosphorus

Fig. 1

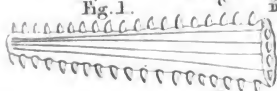
Phosphorus

Fig. 2

Fig. 17

Fig. 16

Fig. 1



PRISTIS

Fig. 3

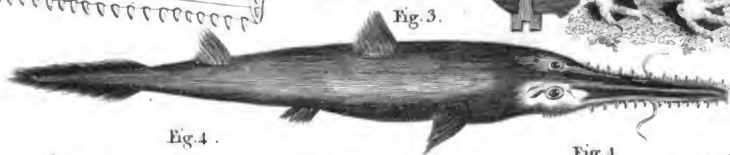


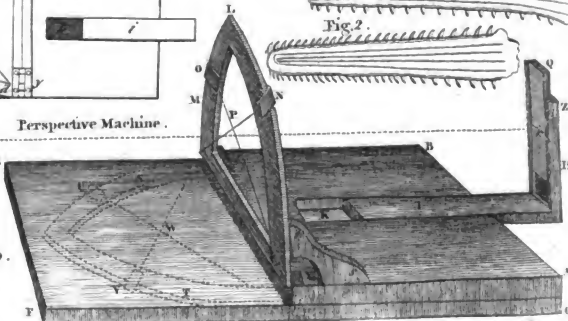
Fig. 4

Fig. 4

Fig. 2

Perspective Machine.

Fig. 5



PERSPECTIVE.

1st Plate CCLXXIV.



Fig. 2.



Fig. 1.



Fig. 3.

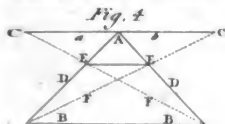


Fig. 4.

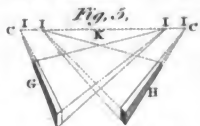


Fig. 5.

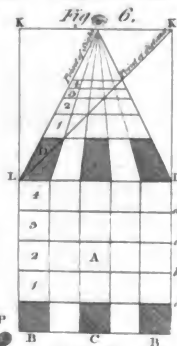


Fig. 6.

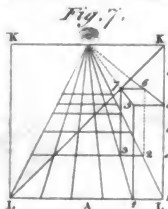


Fig. 7.

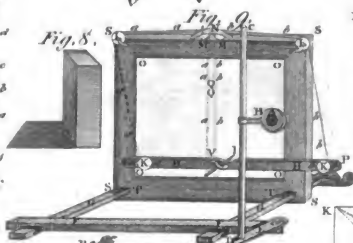


Fig. 8.

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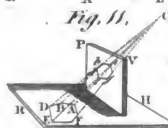


Fig. 11.

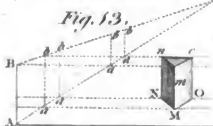


Fig. 13.



Fig. 10.

Fig. 16.

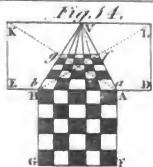


Fig. 14.



Fig. 17.

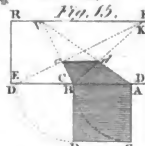


Fig. 15.

Fig. 18.

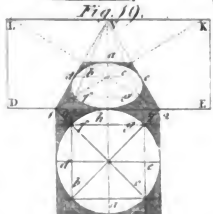


Fig. 19.

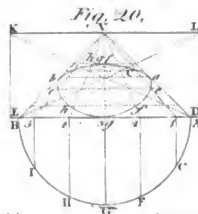
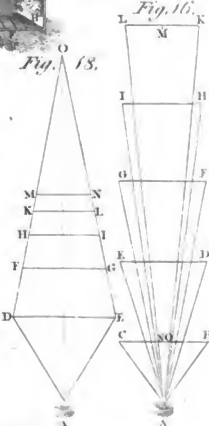


Fig. 20.



Illustrated by

J. Stewart 1861

Pilot Fish



Pinna

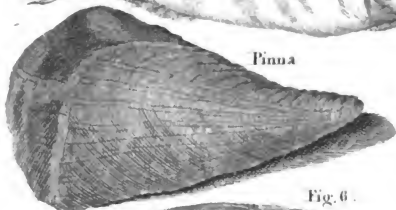


Fig. 6.

Fig. 1.



Fig. 2.



Fig. 7.



Fig. 6.

Sea Pipes & Ears

Fig. 3.

Fig. 5.



Fig. 4.



Bucher's PILE Engine

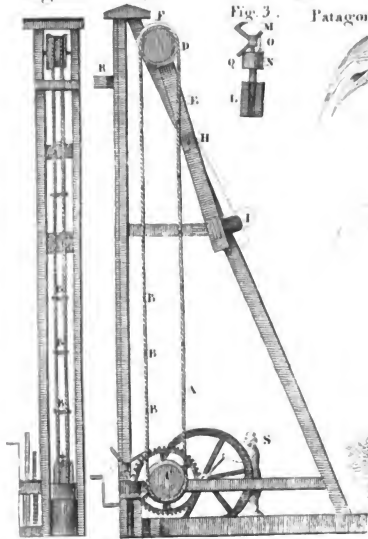
Fig. 2.

Fig. 1.



Fig. 3.

Patagonian Penguin



Platalea or Spoonbill



Anatomy of PLANTS.

Plate CCXXX

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Fig. 281.

PLOUGH.

Fig. 2.

Fig. 1.

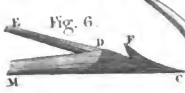
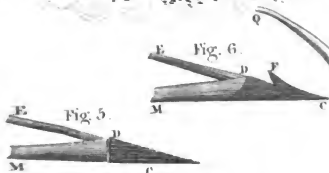
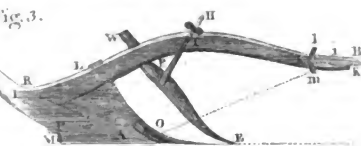


Fig. 3.



Scale of Feet for Small Plough

Protractor
Fig. 2.

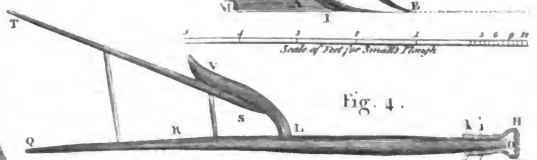
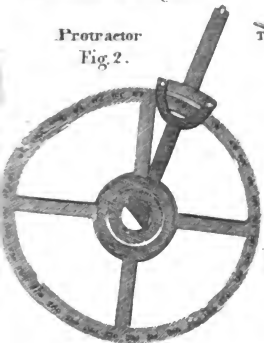
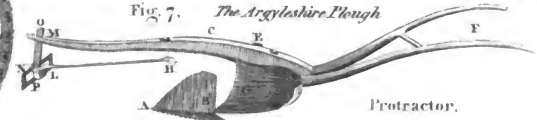


Fig. 4.

Fig. 7. The Argyleshire Plough



Protractor.
Fig. 3.

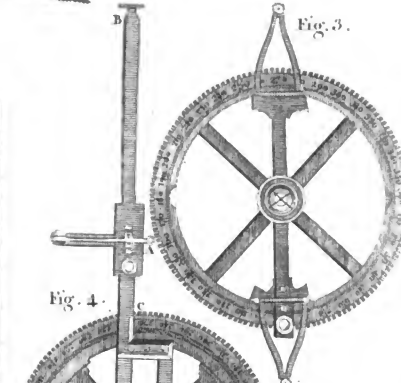
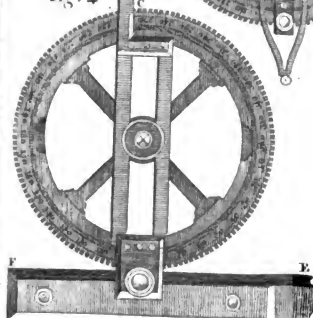


Fig. 4.



Vegetable Cabinet

II	XVII
III	XVIII
IV	XIX
V	XX
VI	XXI
VII	XXII
VIII	XXIII
IX	XXIV
X	
XI	
XII	
XIII	
XIV	
XV	
XVI	

1 2 3 4 5 6 7 8 9 10 11 12 Inches

Edinburgh: Sculp.

PNEUMATICS

Plate CCXXVIII

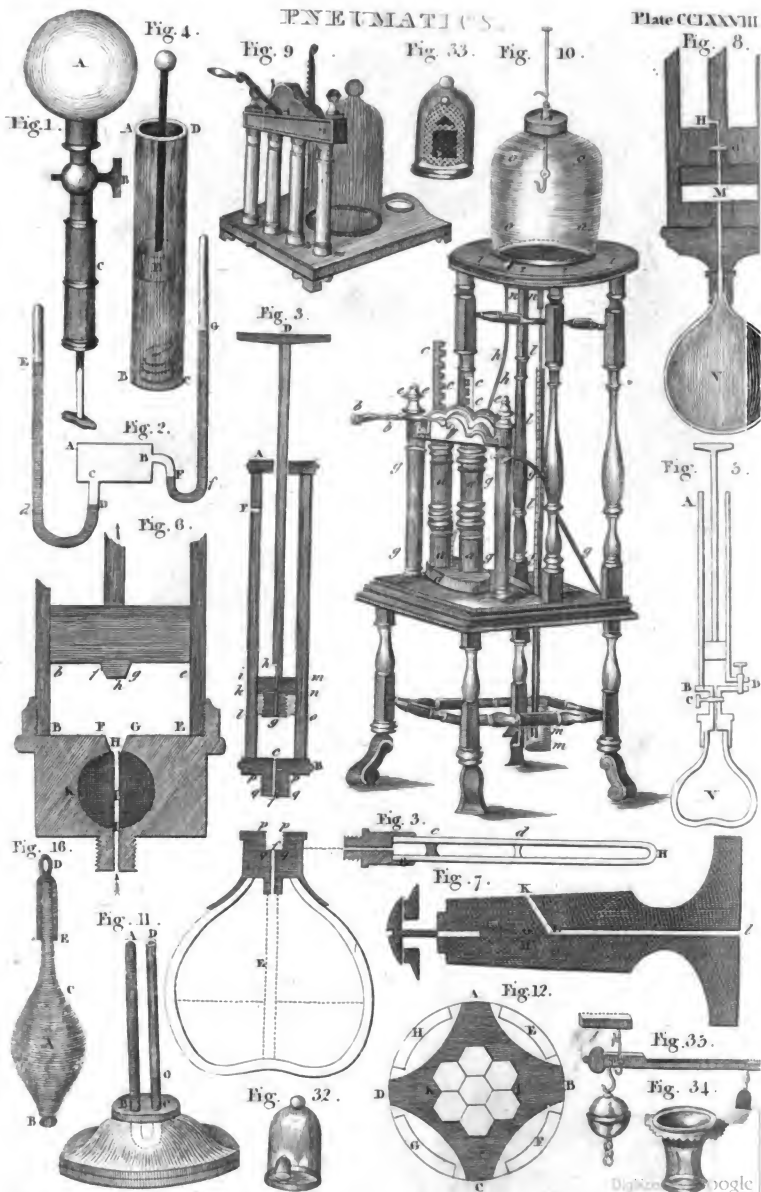


Fig. 15.

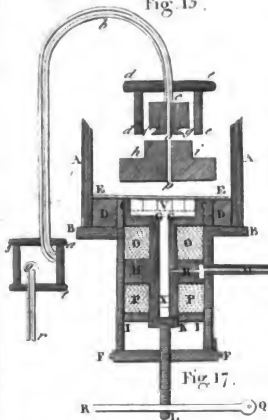


Fig. 13.

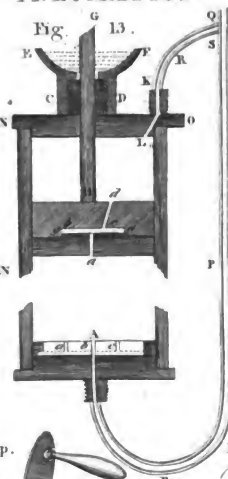


Fig. 43.



Fig. 61.



Fig. 17.



Fig. 19. Cuthbertson's Air Pump.

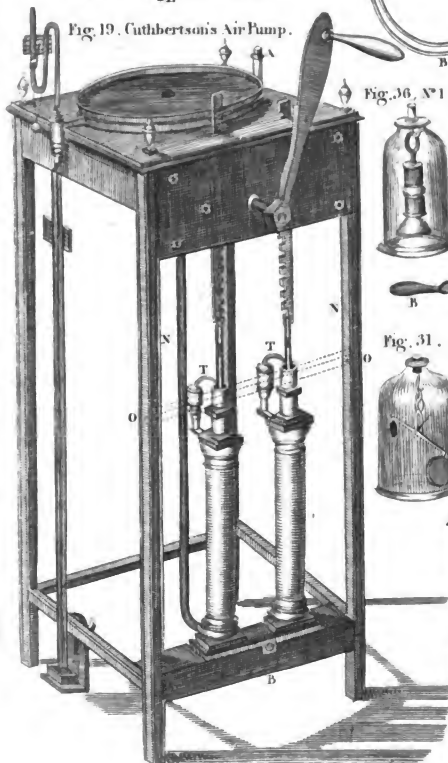


Fig. 36. N° 1.



Fig. 39.



Fig. 20.



Fig. 14.

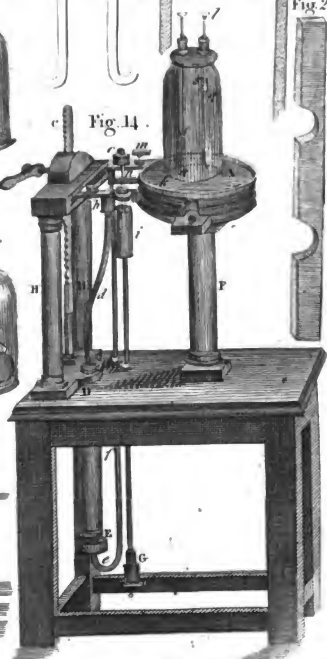


Fig. 31.



Fig. 27. Section of Cuthbertson's air pump.

